

# Pesticide exposure contributes to heightened risk of heart disease

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Pesticide exposure, not obesity alone, can contribute to increased cardiovascular disease risk and inflammation in premenopausal women, according to a new study published in the Endocrine Society's *Journal of Clinical Endocrinology & Metabolism*.

The study looked at the effects of exposure to polychlorinated pesticides such as DDT. Although DDT was banned in many countries in the 1970s, it remains widespread in the environment and food supply.

DDT was one of the first recognized endocrine-disrupting chemicals, according to the introductory guide to endocrine-disrupting chemicals published by the Endocrine Society and IPEN. DDT and related pesticides are known as environmental estrogens because they can mimic and interfere with the function of the hormone estrogen. Research has found DDT exposure is linked to birth defects, reduced fertility and increased risk of Type 2 diabetes.

"After the body breaks down DDT along with similar pesticides, chemical remnants called metabolites accumulate in women's [fat tissue](#)," said one of the study's authors, Diana Teixeira, PhD student of the Faculty of Medicine, University of Porto in Porto, Portugal. "When higher amounts of these environmental estrogens collect in the fat tissue, it can compromise the protective effect the body's natural estrogen has on a premenopausal woman's heart health. This leaves women at increased risk of developing cardiovascular disease and inflammation."

The study analyzed the amount of endocrine-disrupting chemicals in fat tissue and blood samples from 121 obese women who underwent bariatric surgery at S. João Hospital in Porto. Among the participants, 73 were classified as premenopausal and 48 were postmenopausal. The researchers tested the participants' fasting blood glucose and cholesterol. Using the Framingham risk score, the researchers assessed the women's 10-year risk of developing cardiovascular disease.

Researchers found that among [premenopausal women](#), women with higher concentrations of environmental estrogens in their visceral fat tissue from the belly were more likely to have higher average blood sugar levels. Among premenopausal women, those with higher levels of environmental estrogens in their blood tended to have more inflammation and faced a greater risk of cardiovascular disease on the Framingham scale.

"Our findings show that endocrine-disrupting chemicals tend to aggravate complications of [obesity](#), including [inflammation](#) and [cardiovascular disease risk](#), in premenopausal women," Teixeira said. "Measuring environmental estrogen levels may help physicians identify women who are at risk of developing cardiovascular and metabolic disease so they can take preventative action."

**More information:** "Inflammatory and Cardiometabolic Risk on Obesity: Role of Environmental Xenoestrogens," [press.endocrine.org/doi/10.1210/jc.2014-4136](https://press.endocrine.org/doi/10.1210/jc.2014-4136)

Provided by The Endocrine Society

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