

Women with polycystic ovary syndrome have higher BPA blood levels

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Women with the polycystic ovary syndrome (PCOS), the most common hormone imbalance in women of reproductive age, may be more vulnerable to exposure to the chemical bisphenol A (BPA), found in many plastic household items, according to a new study. The results will be presented Sunday at The Endocrine Society's 92nd Annual Meeting in San Diego.

The study found that BPA, a known hormone disrupter, is elevated and associated with higher levels of [male hormones](#) in the blood of women with PCOS compared with healthy women. These findings held true for both lean and obese women with PCOS, said Evanthia Diamanti-Kandarakis, MD, PhD, study co-author and professor at the University of Athens Medical School in Greece.

"Women with the polycystic ovary syndrome should be alert regarding this environmental contaminant's potential adverse effects on reproductive aspects of their health problem," she said.

Excessive secretion of androgens—masculinization-promoting hormones—occurs in PCOS. The syndrome raises the risk of infertility, obesity, Type 2 diabetes and heart disease.

Past studies show that BPA is elevated in women who have had recurrent miscarriages. This chemical can leach into the bloodstream from food and beverage containers that are made of polycarbonate hard plastic or lined with epoxy resins, or from some dental sealants and composites.

In the new study, the researchers divided 71 women with PCOS and 100 healthy female control subjects into subgroups matched by age and [body composition](#) (obese or lean). Blood levels of BPA, compared with those of controls, were nearly 60 percent higher in lean women with PCOS and more than 30 percent higher in obese women with the syndrome.

Additionally, as the BPA blood level increased, so did the concentrations of the male sex [hormone testosterone](#) and androstenedione, a steroid hormone that converts to testosterone, Diamanti-Kandarakis reported.

Although BPA is a weak estrogen, excessive secretion of androgens, as seen in PCOS, interfere with BPA detoxification by the liver, leading to accumulation of blood levels of BPA, Diamanti-Kandarakis explained.

"BPA also affects androgen metabolism, creating a vicious circle between androgens and BPA," she said.

Diamanti-Kandarakis said women with PCOS may want to limit their exposure to BPA.

"However," she said, "no one has proved that by reducing BPA levels in PCOS, it will have beneficial effects."

Provided by The Endocrine Society

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