

Some women with PCOS may have adrenal disorder, researchers suggest

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A subgroup of women with polycystic ovary syndrome (PCOS), a leading cause of infertility, may produce excess adrenal hormones, according to an early study by researchers at the National Institutes of Health and other institutions.

PCOS is a group of symptoms related to high levels of hormones known as androgens. In many women with the condition, the ovaries contain numerous small, cyst-like sacs. Women with PCOS may have irregular, missing, or prolonged menstrual periods, excessive facial and body hair, insulin resistance, and problems with fertility. Treatment may include drugs that block androgens, and oral contraceptives, which contain the hormones estrogen and progesterone.

"Traditionally, treatment for PCOS has included modifying ovarian hormones," said Constantine Stratakis, M.D., director of intramural research at NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) and senior author of the study. "Our findings indicate that a subgroup of patients could conceivably benefit from modification of adrenal hormones as well."

The study was published online in the *Journal of Clinical Endocrinology and Metabolism*. The study's first author is Evgenia Gourgari, M.D., of Georgetown University, Washington, D.C., who was a research fellow at NICHD when the study was conducted.

In their article, the researchers noted that earlier studies had found that in some women with PCOS, androgens were produced by the [adrenal glands](#), rather than by the ovaries. On the basis of these observations, the researchers decided to test the adrenal functioning of women with PCOS.

A total of 38 women with PCOS volunteered for the study, along with 20 healthy women, who served as a comparison, or control group. They studied

the PCOS patients' adrenal functioning with a diagnostic procedure known as Liddle's test, used to diagnose disorders of the adrenal glands. The test consists of a two-part sequence in which women take the drug dexamethasone, which mimics the adrenal hormone cortisol, first in a low dose and then in a high dose. At the end of the test, people with disorders of the adrenal glands often will produce high levels of adrenal hormones.

The researchers found that 15 of the 38 PCOS patients produced more adrenal hormones than normal. The women also had adrenal glands that were smaller than normal.

The researchers theorize that the women's adrenal glands may resemble those seen in a condition called micronodular adrenocortical hyperplasia—in which tiny lumps or nodules appear on the adrenal glands and begin producing adrenal hormones. Because the nodules produce hormones, the adrenals produce fewer hormones and shrink.

Dr. Stratakis added that additional studies with a larger number of patients will be needed to examine the adrenal glands of women with PCOS to confirm the study results and to determine whether the [women](#) have micronodular adrenocortical hyperplasia or some other condition affecting the adrenal glands.

More information: Bilateral adrenal hyperplasia as a possible mechanism for hyperandrogenism in women with polycystic ovary syndrome. *J Clin Endocrinol Metab*. 2016 Jun 23;jc20154019. [Epub ahead of print] www.ncbi.nlm.nih.gov/pubmed/27336356

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