

Fat behaves differently in patients with polycystic ovary syndrome

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Fat tissue in women with Polycystic Ovary Syndrome produces an inadequate amount of the hormone that regulates how fats and glucose are processed, promoting increased insulin resistance and inflammation, glucose intolerance, and greater risk of diabetes and heart disease, according to a study conducted at the Center for Androgen-Related Research and Discovery at Cedars-Sinai Medical Center.

Polycystic Ovary Syndrome, or PCOS, is the most common hormonal disorder of [women](#) of childbearing age, affecting approximately 10 percent of women. It is the most common cause of infertility, and an important risk factor for early diabetes in women.

"We're beginning to find that fat tissue behaves very differently in patients with PCOS than in other women," said Ricardo Azziz, M.D., M.P.H., director of the Center for Androgen-Related Research and Discovery, and principal investigator on the study. "Identifying the unusual behavior of this fat-produced hormone is an important step to better understanding the causes underlying the disorder, and may be helpful in developing treatments that will protect patients against developing heart disease and [insulin resistance](#)."

Fat tissue is the body's largest hormone-producing organ, secreting a large number of hormones that affect appetite, bowel function, [brain function](#), and fat and sugar metabolism. One of these hormones is adiponectin, which in sufficient quantities encourages the proper action of insulin on fats and sugars and reduces inflammation. Women with

PCOS produce a smaller amount of adiponectin than women who do not have the disease, in response to other fat-produced hormones, according to the research to be published in the February issue of [Journal of Clinical Endocrinology and Metabolism](#).

While Polycystic [Ovary Syndrome](#) is often associated with obesity, women with the disorder are not necessarily more likely to be overweight. In fact, in the study, adiponectin was lacking in PCOS patients whose weight was considered to be in a healthy range, as well as in those patients who were overweight.

PCOS also can cause symptoms such as irregular ovulation and menstruation, infertility, excess male hormones, excess male-like hair growth (hirsutism), and polycystic ovaries. About two-thirds of women with PCOS have insulin resistance, an impairment in the effectiveness of the hormone insulin, which regulates the body's utilization of fats and sugars, and which results in a higher risk for diabetes, metabolic syndrome, and cardiovascular disease. The causes of insulin resistance in PCOS patients remain unknown.

More information: Published online ahead of print and available at <http://jcem.endojournals.org/cgi/rapidpdf/jc.2009-1158v1>.

Provided by Cedars-Sinai Medical Center

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