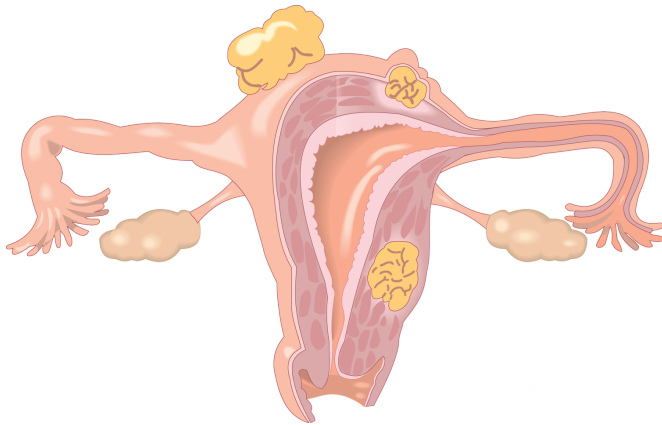


# Hormone from fat tissue can give protection against polycystic ovary syndrome

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Obesity and reduced insulin sensitivity are common in polycystic ovary syndrome, PCOS. New research based on animal studies, and to be published in the journal *PNAS*, reveals that the hormone adiponectin can protect against these changes.

Polycystic ovary syndrome, PCOS, affects more than one in ten women of fertile age. It is characterised by high levels of the male sex hormone testosterone and disrupted ovulation, which can cause infertility. PCOS is also often associated with overweight and an impaired ability to respond to the glucose-regulating hormone insulin, so-called insulin resistance. This in turn results in an increased risk of type 2 diabetes.

An international research team, led by the University of Gothenburg and Karolinska Institutet, has previously shown that women with PCOS have lower levels of the fat tissue-derived hormone adiponectin. Furthermore, there is a strong link between low adiponectin levels, increased waistline, large fat cells and insulin resistance in these women. A causal relationship between the

low adiponectin levels and the metabolic disturbances in PCOS has however not been proven.

In this new study, the researchers therefore looked at two types of genetically modified female mice. In one group they studied mice with elevated levels of adiponectin, and in the other mice with a total lack of adiponectin. Half of the mice in each group received [male sex hormone](#), which induces PCOS symptoms in normal [mice](#). Mice with high levels of adiponectin were shown to be protected against PCOS-related metabolic disorders such as insulin resistance and abdominal obesity. However, adiponectin did not protect against disruption of ovulation.

"The results show that adiponectin plays an important role in fat tissue function and probably also in the development of obesity and [insulin resistance](#) in women with PCOS. A drug that acts similarly as [adiponectin](#) may therefore be an effective future treatment of the metabolic disorders that affect women with PCOS," says the researchers behind the study.

**More information:** Anna Benrick et al. Adiponectin protects against development of metabolic disturbances in a PCOS mouse model, *Proceedings of the National Academy of Sciences* (2017). [DOI: 10.1073/pnas.1708854114](https://doi.org/10.1073/pnas.1708854114)

Provided by Karolinska Institutet

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