

Aberrations in adipose tissue could increase risk of diabetes in PCOS

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A study from the University of Gothenburg, shows that women with polycystic ovary syndrome (PCOS) have aberrations in their adipose (fat) tissue. This discovery could provide answers as to why these women develop type 2 diabetes more readily, and shows that it is important for their health that women with PCOS do not put on weight.

"We already know that women with PCOS often have [insulin resistance](#), in other words the body's cells are less sensitive to insulin, and are at greater risk of developing [type 2 diabetes](#)," says Louise Manneras-Holm, a researcher at the Department of Physiology at the Sahlgrenska Academy's Institute of Neuroscience and Physiology. "High levels of testosterone in the blood of these women are thought to be one of the main reasons for this."

But the current study, published in The [Journal of Clinical Endocrinology and Metabolism](#), shows that aberrations in adipose tissue could be more significant in this respect. Around half of all women with PCOS are overweight or obese and it is widely believed that the excess fat is stored mainly around the middle. The study therefore pair-matched 31 women with PCOS and 31 women without the syndrome, but of the same age and BMI. Ages ranged from 21 to 37, and BMI from underweight to extremely obese. "The comparison between the groups shows that women with PCOS do not have an abnormally large amount of fat around the middle, but that they do have large [fat cells](#) and altered adipose tissue function," says Mannerås-Holm.

In women with PCOS, adipose tissue produces less of the "good" hormone adiponectin which increases the body's sensitivity to insulin. Furthermore, activity of the enzyme lipoprotein lipase is low, which can affect the metabolism of fat in the body.

A total of 74 women with PCOS took part in the study, which also shows that the aberrations in adipose tissue in PCOS could play a key role in increasing these women's risk of developing type 2 [diabetes](#). The factors linked most strongly with insulin resistance were the size of the fat cells, the quantity of adiponectin in the blood and waist size. However, [testosterone](#) levels did not play a significant role in this analysis.

"We don't entirely understand the mechanism behind the large fat cells' unfavourable effects, but the results show that it is particularly important for the health of women with PCOS that they don't put on weight," says Manneras-Holm.

Provided by University of Gothenburg

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