

PCOS Linked to Higher Risk of Liver Disease

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Women with a disease of the ovaries known as [polycystic ovary syndrome](#) (PCOS) face a higher risk of developing liver disease, claim doctors in Southern California.¹ This finding is important for doctors who may not be aware that women with PCOS face this higher risk, and thus treat them with medications that could be toxic to the liver, say the study's investigators.

PCOS is a disorder caused by a hormone imbalance, which may be linked with the way the body processes insulin. Insulin is a hormone produced by the body that promotes the use of blood sugar. When there are problems with the way insulin is used, the ovaries can produce an abnormal abundance of male hormones, which is characteristic of PCOS.

Among the signs of PCOS is the growth of abnormal cysts on the ovaries. This is accompanied by irregular menstrual cycles. Women diagnosed with PCOS can often become infertile.

Symptoms of the disease include hirsutism (abnormal growth of hair), thinning hair, acne, weight gain, and depression and anxiety.²

The Liver Disease Link Examined

In their study published in the journal *Fertility and Sterility*, physicians at the University of California at San Diego theorized that PCOS is connected with a higher risk of developing non-alcoholic fatty liver disease, or NAFLD. This is an umbrella term used to describe a range of liver diseases, from benign to potentially fatal, characterized by the accumulation of fat in the liver.³ This increase in fatty liver risk can be caused by different things, such as diabetes, weight gain, poor diet or associated illnesses like tuberculosis. The worst kind of fatty liver disease is known as non-alcoholic steatohepatitis (NASH), which is diagnosed when accumulated fat causes liver inflammation, resulting in damage. NASH is not associated with hepatitis.⁴

"We hypothesized that women with PCOS would demonstrate a high incidence of NAFLD because of the link to insulin resistance," explained Walter Schwimmer, MD, of Kaiser Permanente Medical Center in Bellflower, California, one of the study's investigators. Insulin resistance is a shared characteristic of both PCOS and NAFLD.

"The data in the study, in fact, demonstrate that elevated ALT is more common in women with PCOS than in the general population of women of a similar age, race and body weight," Schwimmer said.

ALT stands for *alanine aminotransferase* (AL-uh-noon uh-meem-oh-TRANZ-fer-aze), an enzyme released by the liver into the bloodstream when the liver is damaged.⁵ As such, doctors look for levels of ALT as a sign of liver disease.

Patient Data Collected

For their study, the researchers led by Jeffrey Schwimmer, MD, an assistant clinical professor of Pediatrics, reviewed the records of 70 women who had been evaluated for [infertility](#) at an area hospital. Information on height, weight, blood pressure, hirsutism, liver enzyme levels, fasting glucose, fasting insulin, and cholesterol was gathered.

Schwimmer and his team found that nearly a third of the women diagnosed as having PCOS had higher-than-normal levels of ALT, indicating the presence of liver disease. Additionally, levels of another liver enzyme, *aspartate aminotransferase* (as-PAR-tate uh-meen-oh-TRANZ-fer-aze), or AST, were increased in 12 percent of the patients studied. "All seven subjects with an elevated AST also had an elevated ALT," the researchers noted.

Women with higher ALT levels also significantly weighed more, had a higher waist circumference, increased triglyceride levels, and higher cholesterol, they found. "There was a significant association between the presence of hirsutism and the finding of an abnormal ALT in women with PCOS," wrote Schwimmer's team. The link between fatty liver disease and hirsutism was "very unexpected", Walter Schwimmer said.

"We determined that insulin resistance explains the high rate of elevated ALT in women with PCOS, and that these women with PCOS are at increased risk for NAFLD," Walter Schwimmer said.

Study Caveat

But the investigators also cautioned that since liver biopsies weren't performed in the study, it was not possible to determine the true prevalence of NAFLD in the group of women.

In conclusion, the investigators recommend that women diagnosed with PCOS who also have higher ALT levels avoid alcohol and acetaminophen, both of which can be toxic to a diseased liver.

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