

Sleep apnea with polycystic ovary syndrome raises risk of prediabetes

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Women with polycystic ovary syndrome (PCOS) who also have obstructive sleep apnea have at least three times the risk of having prediabetes compared with women who do not have PCOS, according to a new study. The results will be presented Tuesday at The Endocrine Society's 94th Annual Meeting in Houston.

"In the last few years, sleep apnea has been found to be a frequent comorbidity [coexisting condition] with PCOS, and our study shows that women who have both conditions are at greatest risk of [metabolic disturbances](#) such as prediabetes," said the study's senior author, David Ehrmann, MD, a University of Chicago professor of medicine and director of the University of Chicago Center for PCOS.

"Patients who have one or both of these conditions should be screened early for [Type 2 diabetes](#) and should be monitored regularly," Ehrmann said.

He and his colleagues studied 171 obese women: 121 with PCOS, a common female [hormonal disorder](#) that affects 5 to 10 percent of women of childbearing age, and 50 without PCOS. All study subjects had an [oral glucose tolerance test](#), which measures the [blood sugar level](#) before and for two hours after the patient drinks a sugary solution. If the [blood glucose level](#) at two hours is less than 140 mg/dL, it is considered normal. Levels above 200 mg/dL indicate Type 2 diabetes, and levels between 140 and 200 mg/dL are diagnostic of impaired glucose tolerance, also called prediabetes. Prediabetes often progresses to Type 2

diabetes.

Additionally, all women had an overnight sleep study, called a [polysomnogram](#), to look for obstructive sleep apnea, in which breathing stops repeatedly during sleep. Mild sleep apnea is defined as having between 5 and 15 such episodes per hour of sleep; moderate sleep apnea exists when 15 to 30 episodes occur per hour and severe sleep apnea is present when more than 30 such episodes occur per hour. There appears to be a strong relationship between sleep apnea severity and [diabetes risk](#), Ehrmann said.

In women with PCOS, sleep apnea was more prevalent than in the control subjects without PCOS (48 percent versus 36 percent, respectively), and when present, it also was more severe, the authors reported. Similarly, PCOS-affected women were more likely to have [prediabetes](#)—44 percent versus 22 percent of controls.

The investigators found that the greater the severity of obstructive sleep apnea in women with PCOS, the higher their two-hour blood sugar values were on the glucose tolerance test.

The research team also found that the lower the levels of the female hormone progesterone, the higher the blood sugar values. Progesterone is typically low in women with PCOS, and Ehrmann said insufficient progesterone may contribute to obstructive sleep apnea. Notably, high testosterone levels were not predictive of sleep apnea or abnormal glucose tolerance, he said.

PCOS causes the ovaries to produce an excess of male hormones and is the most common cause of female infertility. It also can result in obesity, acne, thinning hair on the scalp and excessive facial and body hair.

Provided by The Endocrine Society

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