

UNIVERSITY STUDENT HEALTH SERVICES • Fact Sheet

POLYCYSTIC OVARY SYNDROME (PCOS)**WHAT IS POLYCYSTIC OVARY SYNDROME?**

Polycystic Ovary Syndrome (PCOS) is one of the most common hormonal abnormalities in women of childbearing age. Individuals with this syndrome experience irregular menses and other symptoms related to elevated androgen levels. Androgens are “male” hormones that are normally produced by all sexes.

WHAT CAUSES PCOS?

The cause of PCOS is not completely understood. A complex combination of genetic and environmental factors appears to lead to hormonal changes that disrupt the normal function of the ovaries:

- ❖ During a normal menstrual cycle, the ovaries make a structure called a follicle, which releases estrogen as it grows. Eventually the follicle releases an egg during ovulation. After ovulation, the ovary produces progesterone in addition to estrogen.
- ❖ In PCOS, ovulation does not occur regularly, leading to an imbalance in sexual hormones. Instead of making one big follicle, the ovary makes many small follicles that never grow large enough to trigger ovulation and the release of progesterone. The resulting hormonal imbalance leads to irregular menses and high androgen levels.
- ❖ High insulin levels are also believed to contribute to increased androgen levels. Please refer to the information about “insulin resistance” below.

WHAT ARE SYMPTOMS OF PCOS?

Signs and symptoms of PCOS usually begin around puberty, though some patients do not develop symptoms until late adolescence or early adulthood.

- ❖ Irregular menses are present in 70% of individuals with PCOS. When ovulation does not occur, the lining of the uterus becomes thicker and tends to shed irregularly. This can result in:
 - Absent or irregular and infrequent menses (most patients with PCOS have less than 6-9 menses per year).
 - Heavy and/or prolonged menstrual bleeding.
- ❖ Excessive androgen production occurs in approximately 70% of individuals with PCOS. Common symptoms include:
 - Male-pattern hair growth, such as on the upper lip, chin, sideburn area, nipple area, chest, lower abdomen, and/or inner thighs.
 - Hair thinning or bald spots.
 - Problems with acne.
- ❖ Other findings may include:
 - Increased body weight. 70-80% of patients with PCOS are overweight. However, thin individuals can also develop PCOS.
 - Insulin resistance. Insulin is a hormone that regulates blood sugar levels. In PCOS, the body is often not able to use insulin efficiently. As a result, it compensates by making more insulin to maintain normal sugar levels. This is known as “insulin resistance”. High insulin levels can lead to increased androgen production.
 - Ovarian cysts. In PCOS, the ovaries make many small follicles, which may be visible as “cysts” on an ultrasound (hence the term “polycystic ovaries”). Contrary to popular belief, this finding does not necessarily mean that a person has PCOS. That’s because these follicles can be seen in any condition where ovulation does not occur.

IS PCOS A DANGEROUS CONDITION?

Individuals with PCOS are more likely to develop other health problems. These include:

- ❖ Diabetes (high blood sugar). If increased insulin levels are not able to control blood glucose, insulin resistance may progress to prediabetes or type 2 diabetes. The risk of diabetes is higher in patients with PCOS compared to those without PCOS.
- ❖ Heart disease. The risk of heart disease may be higher in people with PCOS. More research is needed to know for sure.
- ❖ Infertility. Because many individuals with PCOS don't ovulate regularly, it can be more difficult for them to become pregnant.
- ❖ Endometrial hyperplasia. Prolonged periods of time without menstruation increases estrogen exposure to the uterus, which increases the risk of endometrial hyperplasia (overgrowth of the uterine lining). There is a small risk this condition can progress to endometrial (uterine) cancer if it is not treated.
- ❖ Sleep apnea. This disorder is common in PCOS patients. People with sleep apnea stop breathing for short periods of time while asleep. The resulting poor quality sleep causes excessive daytime sleepiness/fatigue and can contribute to high blood pressure.

HOW IS PCOS DIAGNOSED?

- ❖ No single test can diagnose PCOS. To meet criteria for diagnosis, 2 out of the 3 following findings must be present:
 - Irregular menses caused by infrequent ovulation.
 - Evidence of high androgen levels. This can be based upon either symptoms (abnormal hair growth, acne, etc.) or blood tests.
 - Polycystic ovaries on ultrasound.
- ❖ Lab tests are used to rule out other causes of abnormal menses and excess androgens.
- ❖ If a diagnosis of PCOS is made, tests for diabetes and cholesterol should be completed.

HOW IS PCOS TREATED?

PCOS is not completely reversible, but effective treatments are available to reduce symptoms and complications. All individuals with PCOS should be monitored regularly by their healthcare provider to decrease the risk of developing other health problems as described above.

- ❖ Weight loss
Weight loss is very beneficial in reducing both insulin and androgen levels in overweight individuals with PCOS. A 5-10% decrease in body weight can significantly improve many PCOS symptoms, especially irregular menses.
- ❖ Medications
 - Birth control pills are the most commonly used treatment for PCOS. They regulate the menstrual cycle and protect against uterine cancer. Because birth control pills decrease the body's production of androgens, they can also help with excess hair growth and acne.
 - Anti-androgens like spironolactone (Aldactone) can be used to treat acne and excess hair growth that is not responding to birth control pills.
 - Metformin (Glucophage) is most commonly used to treat diabetes, but may be recommended for the treatment of PCOS in select cases.
 - Metformin improves the body's response to insulin and may also increase weight loss from diet and exercise.
 - Metformin also restores regular menstrual cycles (and therefore improves fertility) in about 50% of women who try it. It is usually recommended for patients who cannot take birth control pills to regulate their cycles.

WHAT IF I WANT TO GET PREGNANT?

Most women with PCOS are able to get pregnant, but it can be more difficult. Modest weight loss is the primary way to improve ovulation and fertility in those who are overweight. If weight loss is not effective, clomiphene or other fertility medications may be prescribed by a specialist.

RECOMMENDED WEBSITES: familydoctor.org, mayoclinic.org, www.pcosaa.org