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Polycystic Ovarian Syndrome (PCOS)

Q: What is Polycystic Ovarian Syndrome (PCOS)?

A: PCOS is a health problem that can affect a woman's menstrual cycle, fertility, hormones, insulin production,

heart, blood vessels, and appearance. Women with PCOS have these characteristics:

- high levels of male hormones, also called androgens
- an irregular or no menstrual cycle
- may or may not have many small cysts in their ovaries. Cysts are fluid-filled sacs.

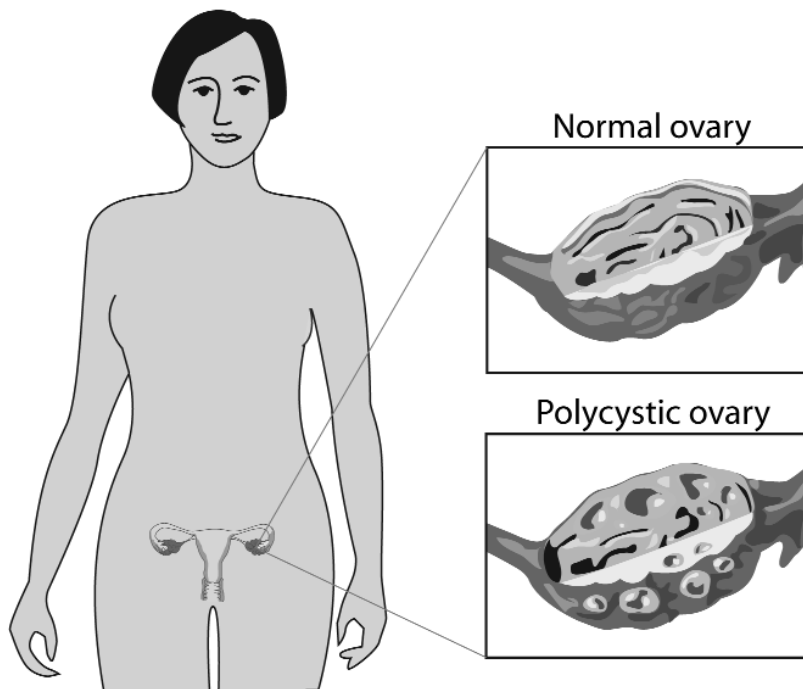
PCOS is the most common hormonal reproductive problem in women of childbearing age.

Q: How many women have Polycystic Ovarian Syndrome (PCOS)?

A: An estimated five to 10 percent of women of childbearing age have PCOS.

Q: What causes Polycystic Ovarian Syndrome (PCOS)?

A: No one knows the exact cause of PCOS. Women with PCOS frequently have a mother or sister with PCOS. But there is not yet enough evidence to say there is a genetic link to this disorder. Many women with PCOS have a weight problem. So researchers are looking at the relationship between PCOS and the body's ability to make insulin. Insulin is a hormone that regulates the change of sugar, starches, and other food into energy for the body's use or for storage. Since some women with PCOS make too much insulin, it's possible that the ovaries react by making too many male hormones, called androgens. This can lead to acne, excessive hair growth, weight gain, and ovulation problems.





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Q: Why do women with Polycystic Ovarian Syndrome (PCOS) have trouble with their menstrual cycle?

The ovaries are two small organs, one on each side of a woman's uterus. A woman's ovaries have follicles, which are tiny sacs filled with liquid that hold the eggs. These sacs are also called cysts. Each month about 20 eggs start to mature, but usually only one becomes dominant. As the one egg grows, the follicle accumulates fluid in it. When that egg matures, the follicle breaks open to release the egg so it can travel through the fallopian tube for fertilization. When the single egg leaves the follicle, ovulation takes place.

In women with PCOS, the ovary doesn't make all of the hormones it needs for any of the eggs to fully mature. They may start to grow and accumulate fluid. But no one egg becomes large enough. Instead, some may remain as cysts. Since no egg matures or is released, ovulation does not occur and the hormone progesterone is not made. Without progesterone, a woman's menstrual cycle is irregular or absent. Also, the cysts produce male hormones, which continue to prevent ovulation.

Q: What are the symptoms of Polycystic Ovarian Syndrome (PCOS)?

- A:** These are some of the symptoms of PCOS:
- infrequent menstrual periods, no menstrual periods, and/or irregular bleeding
 - infertility or inability to get pregnant because of not ovulating

- increased growth of hair on the face, chest, stomach, back, thumbs, or toes
- acne, oily skin, or dandruff
- pelvic pain
- weight gain or obesity, usually carrying extra weight around the waist
- type 2 diabetes
- high cholesterol
- high blood pressure
- male-pattern baldness or thinning hair
- patches of thickened and dark brown or black skin on the neck, arms, breasts, or thighs
- skin tags, or tiny excess flaps of skin in the armpits or neck area
- sleep apnea—excessive snoring and breathing stops at times while asleep

Q: What tests are used to diagnose Polycystic Ovarian Syndrome (PCOS)?

- A:** There is no single test to diagnose PCOS. Your doctor will take a medical history, perform a physical exam—possibly including an ultrasound, check your hormone levels, and measure glucose, or sugar levels, in the blood. If you are producing too many male hormones, the doctor will make sure it's from PCOS. At the physical exam the doctor will want to evaluate the areas of increased hair growth, so try to allow the natural hair growth for a few days before the visit. During a pelvic exam, the ovaries may be enlarged or swollen by the increased number of small cysts. This can be seen more easily by vaginal ultrasound, or screening, to examine



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the ovaries for cysts and the endometrium. The endometrium is the lining of the uterus. The uterine lining may become thicker if there has not been a regular period.

Q: How is Polycystic Ovarian Syndrome (PCOS) treated?

A: Because there is no cure for PCOS, it needs to be managed to prevent problems. Treatments are based on the symptoms each patient is having and whether she wants to conceive or needs contraception. Below are descriptions of treatments used for PCOS.

Birth control pills. For women who don't want to become pregnant, birth control pills can regulate menstrual cycles, reduce male hormone levels, and help to clear acne. However, the birth control pill does not cure PCOS. The menstrual cycle will become abnormal again if the pill is stopped. Women may also think about taking a pill that only has progesterone, like Provera, to regulate the menstrual cycle and prevent endometrial problems. But progesterone alone does not help reduce acne and hair growth.

Diabetes Medications. The medicine, Metformin, also called Glucophage, which is used to treat type 2 diabetes, also helps with PCOS symptoms. Metformin affects the way insulin regulates glucose and decreases the testosterone production. Abnormal hair growth will slow down and ovulation may return after a few months of use. These medications will not cause a person to become diabetic.

Fertility Medications. The main fertility problem for women with PCOS is the lack of ovulation. Even so, her

husband's sperm count should be checked and her tubes checked to make sure they are open before fertility medications are used. Clomiphene (pills) and Gonadotropins (shots) can be used to stimulate the ovary to ovulate.

PCOS patients are at increased risk for multiple births when using these medications. In vitro Fertilization (IVF) is sometimes recommended to control the chance of having triplets or more. Metformin can be taken with fertility medications and helps to make PCOS women ovulate on lower doses of medication.

Medicine for increased hair growth or extra male hormones. If a woman is not trying to get pregnant there are some other medicines that may reduce hair growth. Spironolactone is a blood pressure medicine that has been shown to decrease the male hormone's effect on hair. Propecia, a medicine taken by men for hair loss, is another medication that blocks this effect. Both of these medicines can affect the development of a male fetus and should not be taken if pregnancy is possible. Other non-medical treatments such as electrolysis or laser hair removal are effective at getting rid of hair. A woman with PCOS can also take hormonal treatment to keep new hair from growing.

Surgery. Although it is not recommended as the first course of treatment, surgery called ovarian drilling is available to induce ovulation. The doctor makes a very small incision above or below the navel, and inserts a small instrument that acts like a telescope into the abdomen. This is called laparoscopy. The doctor then punctures the ovary with a small needle carrying an electric current to destroy a small



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portion of the ovary. This procedure carries a risk of developing scar tissue on the ovary. This surgery can lower male hormone levels and help with ovulation. But these effects may only last a few months. This treatment doesn't help with increased hair growth and loss of scalp hair.

A healthy weight. Maintaining a healthy weight is another way women can help manage PCOS. Since obesity is common with PCOS, a healthy diet and physical activity help maintain a healthy weight, which will help the body lower glucose levels, use insulin more efficiently, and may help restore a normal period. Even loss of 10% of her body weight can help make a woman's cycle more regular.

Q: How does Polycystic Ovarian Syndrome (PCOS) affect a woman while pregnant?

A: There appears to be a higher rate of miscarriage, gestational diabetes, pregnancy-induced high blood pressure, and premature delivery in women with PCOS. Researchers are studying how the medicine, metformin, prevents or reduces the chances of having these problems while pregnant, in addition to looking at how the drug lowers male hormone levels and limits weight gain in women who are obese when they get pregnant.

No one yet knows if metformin is safe for pregnant women. Because the drug crosses the placenta, doctors are concerned that the baby could be affected by the drug. Research is ongoing.

Q: Does Polycystic Ovarian Syndrome (PCOS) put women at risk for other conditions?

A: Women with PCOS can be at an increased risk for developing several other conditions. Irregular menstrual periods and the absence of ovulation cause women to produce the hormone estrogen, but not the hormone progesterone. Without progesterone, which causes the endometrium to shed each month as a menstrual period, the endometrium becomes thick, which can cause heavy bleeding or irregular bleeding. Eventually, this can lead to endometrial hyperplasia or cancer. Women with PCOS are also at higher risk for diabetes, high cholesterol, high blood pressure, and heart disease. Getting the symptoms under control at an earlier age may help to reduce this risk.

Q: Does Polycystic Ovarian Syndrome (PCOS) change at menopause?

A: Researchers are looking at how male hormone levels change as women with PCOS grow older. They think that as women reach menopause, ovarian function changes and the menstrual cycle may become more normal. But even with falling male hormone levels, excessive hair growth continues, and male pattern baldness or thinning hair gets worse after menopause. ■



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For More Information...

You can find out more about PCOS by contacting the National Women's Health Information Center (NWHIC) at 1-800-994-9662 or the following organizations:

National Institute of Child Health and Human Development (NICHD), NIH, HHS

Phone: (800) 370-2943

Internet Address:

<http://www.nichd.nih.gov/womenshealth>

American Association of Clinical Endocrinologists (AACE)

Phone: (904) 353-7878

Internet Address: <http://www.aace.com>

American Society for Reproductive Medicine (ASRM)

Phone: (205) 978-5000

Internet Address: <http://www.asrm.org>

Center for Applied Reproductive Science (CARS)

Phone: (423) 461-8880

Internet Address: <http://www.ivf-et.com>

InterNational Council on Infertility Information Dissemination, Inc. (INCIID)

Phone: (703) 379-9178

Internet Address: <http://www.inciid.org>

PolyCystic Ovarian Syndrome Association, Inc. (PCOSA)

Phone: (877) 775-7267

Internet Address: <http://www.pcosupport.org>

The Hormone Foundation

Phone: (800) 467-6663

Internet Address:

<http://www.hormone.org>

The Polycystic Ovarian Syndrome FAQ was reviewed by Nancy Durso, MD, PC, Metro Fertility Care Center.

December 2004