



Metformin and Polycystic Ovary Syndrome

About 30% of the women who seek infertility treatment have a group of symptoms that include irregular or absent menstrual periods, unwanted hair growth, and excess weight gain, especially around the waist. Less frequent symptoms may also include worsening acne, a family history of adult onset diabetes or early heart disease as well as other female relatives with irregular menses and obesity.

When your doctor hears these symptoms, the following tests may be conducted to achieve a diagnosis. Blood will be drawn to check for hormone levels and ratios, an ovarian sonogram will be done to check for the existence of many small follicles (early stage developing eggs) on each ovary, and a complete physical exam will be performed.

Your diagnosis will be Polycystic Ovary Syndrome (PCOS) if some or all of the above tests reveal:

1. A reverse ration of the reproductive hormones. The pituitary release Luteinizing Hormone (LH) and Follicle Stimulating Hormone (FSH). LH and FSH work together to cause one egg to mature and ovulate each month. If the LH level is too high it blocks the ability of the egg to grow. This is a common finding.
2. Elevated male hormone levels. Testosterone and DHEA-S, if elevated, further contribute to blocking ovulation. Elevated Testosterone and DHEA-S can also cause unwanted hair growth and acne
3. The sonogram may show many small follicles on each ovary, all about the same size. This is characteristic of an ovary that keeps trying to grow a mature egg. Continuing growth of the follicle is not possible when the hormones are abnormal, thus ovulation can't occur, or occurs irregularly.
4. Physical exam may reveal the presence of dark coarse hair growth. Common sites are the upper lip, temples, and chin, around the nipples and/or around the umbilicus and inner thighs. While one's ethnic origin may account for some of this unwanted hair growth, the physician can determine what is unusual, and likely due to elevated male hormones. Excess hair growth is another finding in women who have PCOS.
5. Elevated fasting insulin, glucose and lipids. Abnormalities of these values are also a frequent finding. Normalizing insulin levels with medication will help to normalize abnormal lipid ratios in PCO patients. Screening for abnormal glucose is important because PCO women have a 40% risk of developing diabetes.



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After the tests are complete, and the physician suspects PCOS, you may be given a prescription for Metformin. Another name for Metformin is GLUCOPHAGE. This pill will help correct hormone imbalances that PCOS women have. The pills are taken two to three times a day for optimal effectiveness. After taking the pills for 4-8 weeks, ovulation often resumes without further treatment. If Metformin does not work alone, it is often combined with Clomid or injectable hormone medications to successfully promote ovulation.

Metformin is an insulin-sensitizing agent. It works to help the cells of the body transport glucose from the blood into the cell. In some PCOS women, the underlying hormone abnormality is the decreased ability for insulin to assist glucose cross into the cell. Metformin helps the insulin perform more effectively, thereby improving the glucose entry in to the cell. When the insulin works more efficiently the body responds by lowering insulin production. Lowered insulin production works to normalize the woman's hormone values and ratios. When hormone values approach normal, then ovulation can occur.

Metformin may cause diarrhea or stomach pains. These often subside with continued use. If these symptoms are troublesome, try decreasing the number of pills to twice or once daily after meals. When the side effects subside, then try to increase the number of pills gradually until you can tolerate one pill three times daily. Metformin is dispensed in 500 mg and 850 mg tablets. The therapeutic doses of Metformin are 1500 mg per day. Your doctor may prescribe 500-mg tablets 3 times daily, to be taken with meals, or 850 mg tablets to be taken with meals. Use caution with alcohol consumption. A small amount of alcohol taken with meals is usually tolerated. If large amounts of alcohol are consumed however, blood sugar can fall rapidly causing anxiety, behavior similar to being drunk, blurred vision, confusion, cool pale skin, nausea, fast heart beat and/or shakiness.