

# POLYCYSTIC OVARIES

Polycystic ovary syndrome (PCOS) describes a complex medical condition in which ovulation may not be occurring on a regular, predictable basis. Women with PCOS may experience irregular, unpredictable periods, increased hair growth (or loss), excessive weight gain or infertility. Women with PCOS have enlarged ovaries containing many small cysts, hence the name “polycystic ovaries”. Many women have been found to have polycystic ovaries without associated abnormalities of menstruation, hair growth, weight or fertility.

PCOS is associated with abnormal hormone production. This is best understood by first discussing the normal hormone pattern required for ovulation. Hormones produced by the pituitary gland called gonadotrophins (ovary stimulating) control egg development, production of hormones and release of the egg. FSH acts on the ovarian follicle to stimulate maturation of the egg and estrogen production. LH, when it surges, is responsible for release of the egg (ovulation) and the production of progesterone following ovulation. Both are necessary for normal fertility and menstruation. In PCOS, these hormones may be produced in abnormal amounts or in an abnormal ratio. This may lead to

abnormal or incomplete maturation or release of the eggs (ovulatory dysfunction).

Since the pituitary – ovarian hormones operate as a feed-back loop, when any hormone is at an abnormal level, all related hormones are also affected. Often in PCOS, LH levels can be higher than normal leading to an increased LH:FSH ratio. This allows for normal early egg development, but the eggs which are inside cysts (follicles) often arrest in their growth without releasing the egg leaving the ovary with multiple small cysts (polycystic). This may also lead to increased production of testosterone and other male hormones (androgens), even from the adrenal gland which can result in increased male pattern hair growth or loss, acne, and weight gain. Although the ovaries may be enlarged and contain multiple small cysts, these usually remain small and do not require surgical removal and are not associated with an increased risk of ovarian cancer.

## Symptoms of PCOS

- Menstrual irregularities (from infrequent to very heavy bleeding)
- Impaired fertility, usually due to the woman’s inability to ovulate regularly.
- Hair and skin problems (increased male pattern hair growth or male

pattern balding, acne, oily skin, etc.).

- Miscarriage rates are higher, probably because of the hormonal abnormalities.
- High risk for the development of metabolic syndrome (high cholesterol, high blood pressure and type 2 diabetes) and increased heart disease risk.
- Breast milk secretion due to increased risk of elevated prolactin levels.

## Treatment

Treatment choices are based on whether the goal is to correct PCO symptoms such as: abnormal menstruation, abnormal hair growth, acne, etc., or for long term prevention of heart disease and diabetes or to enhance fertility.

Since the signs/symptoms of PCOS are the result of abnormal ovarian hormonal output, the general plan would be to suppress the ovaries and the abnormal hormones. This is easily done with birth control pills. This creates regular, controlled bleeding episodes and will usually decrease the rate of facial hair growth as well as acne. It may be easier to lose weight while on the pills. If necessary, other medications can block the production or action of androgens at the level of the skin (this is how Rogaine works).

Occasionally medications such as Spironolactone or low dose Medrol are given to help in the treatment of unwanted hair growth. The unwanted hair can also be treated by Laser therapy, electrolysis, shaving, waxing or plucking.

One of the most promising therapies for PCOS is the use of “insulin sensitizing” agents such as Metformin, Avandia, etc. These medicines are routinely used in the treatment of Type 2 Diabetes. It may take a relatively long time (6mo-1yr), but these agents alone may restore normal ovulations and fertility, lower abnormal hormone production, aid with weight loss, help stop abnormal hair growth/acne, reduce miscarriages, and may even play a role in preventing the development of metabolic syndrome and heart disease.

Surgical therapies such as laparoscopic ovarian drilling, wedge resection and SPECTOS are designed to reduce the abnormal hormonal output from the ovaries and have good success in specific circumstances.

Although all of these therapies may have success in restoring ovulatory cycles and fertility in women who ovulate infrequently, the mainstay of fertility therapy in PCO has been the use of fertility drugs. Clomid or Femara are usually used as the

initial therapy. If these medicines fail to successfully induce ovulation and/or pregnancy, then a group of naturally occurring or synthetic injectable hormone preparations known as gonadotrophins may be used. In patients with PCO, the best of these preparations usually consists of pure FSH (Metrodin, Gonal F, Bravelle, Follistim, etc.). These agents attempt to normalize the abnormal FSH:LH ratio, but carry the risks of multiple pregnancies and hyperstimulation syndrome. In-vitro fertilization (IVF) may also be offered to women with PCO who fail to conceive on other therapies. If PCOS is the only fertility problem, generally pregnancy rates are excellent.

Although there is currently no known cure for PCOS (as it appears genetic), multiple therapies are available for correction of the signs and symptoms. We usually individualize therapy depending on your symptoms or specific concerns. We will be glad to discuss the most appropriate choice for you.