PCO – Polycystic Ovarian Syndrome

Polycystic ovarian syndrome (PCO) is a classic female infertility problem. About 4% of the general female population suffers from PCO, which accounts for half of all hormonal disorders affecting female fertility.

With PCO, your body secretes far too much androgen, which counteracts your ovaries' ability to make enough progesterone necessary for a normal cycle. Your estrogen levels are fine, though, and your levels of lutenizing hormone (LH) are higher than usual, working overtime to try to kick-start the cycle. But the androgen levels interfere with your follicle stimulating hormone (FSH), which you need to trigger progesterone. As a result, your follicles never develop, and instead turn into small, pea-size cysts on your ovaries. Your ovaries can then enlarge. The elevated androgen levels can also cause you to develop facial hair, hair on other parts of your body (this happens in 70% of the cases and is called *hirsutism*), or even a balding problem. Acne is another typical symptom, as well as obesity, although women who are thin or of normal weight can also have PCO. Your periods will be irregular, and as a result you might be at greater risk for developing *endometrial hyperplasia*, in which your uterine lining thickens to the point of becoming precancerous. (If you have endometrial hyperplasia, progesterone supplements will be given to you to induce a period, or a dilatation and curettage (D & C) may be done to eliminate the lining.) Because of your high levels of androgen, you may also be at an increased risk for cardiovascular disease. Diet can help reduce the onset of heart problems.

If PCO was caught early on in your menstrual history, you simply would have been put on combination oral contraceptives to induce normal withdrawal bleeding and pump your system with normal levels of estrogen and progesterone. Or you would have been put on progestin, a synthetic progesterone supplement, and would have been instructed to take it about mid-cycle.

If you were treated earlier with progestin, you won't experience problems with your cycle unless you go off the drug for some reason. But women who were treated with oral contraceptives for irregular cycles at a very young age may not know *why* they suffered from irregular periods to begin with. When these women go off contraception to conceive, they will be plagued by the same symptoms that initially warranted oral contraception. Sometimes women with normal cycles may develop PCO later in life. In this case they will suddenly develop irregular cycles (called *secondary amenorrhea*).

Why Are Estrogen Levels Normal in PCO Women?

Normal estrogen levels come as a surprise to women with PCO. In normally fertile women, estrogen is made from the follicles. In this case, however, your body converts the androgen into estrogen. If you're obese, estrogen will also be stored in fat cells. This constant estrogen level confuses the hypothalamus, which assumes that high estrogen levels are present because of a developing egg inside the follicle. The hypothalamus will then tell the pituitary to slow down the release of FSH. Without FSH, your follicles won't mature and burst and hence you won't ovulate.

Who's at Risk for PCO?

PCO is hereditary and is more common among women of Mediterranean descent. It's also uncommon to develop PCO later in life, although it can happen. Generally, a PCO woman will begin to experience menstrual irregularities within 3-4 years after her menarche (first period). Women who are obese can be predisposed to PCO because their fatty tissues produce estrogen, which can confuse the pituitary gland. Women who are diabetic or who have a problem with their adrenal glands, thyroid gland, or pituitary gland can develop symptoms of PCO, but technically not have the condition. Make sure you ask your doctor to rule out these conditions before you begin any treatment for PCO. In some cases, PCO may coincide with these conditions.

Reversing Infertility

To reverse infertility in women with PCO, doctors will use the fertility drug clomiphene citrate (Clomid or Serophene) in tablet form. You'll start clomiphene citrate on day 5 of your cycle, then go off the tablet on day 10. If you've had long bouts of amenorrhea, your period will be induced via a progesterone supplement before you start on clomiphene citrate. An average dosage of clomiphene citrate in this case ranges between 25 and 50 milligrams. In some cases, an antiestrogen drug called tamoxifen (also used as treatment in certain kinds of breast and gynecological cancers) may also be used with clomiphene citrate. Roughly 70-90% of all PCO women on clomiphene citrate will ovulate, but pregnancy rates vary; 30-70% of PCO women on clomiphene will conceive.

If you're still not ovulating after taking clomiphene, human chorionic gonadotropin (hCG) may be added to your hormonal "diet" during the luteal phase of your cycle, roughly one week after your last dose of clomiphene citrate.

If this regimen fails, you'll graduate to FSH therapy. (During menopause, FSH naturally soars in the body to compensate for tired

ovaries.) Prior to starting FSH therapy, you'll need to have an hysterosalpingogram to make sure that your fallopian tubes are clear. You may also need a pelvic ultrasound to rule out other structural abnormalities. PCO women don't fare as well on FSH therapy as they do on clomiphene citrate. While 70-80% will ovulate with FSH therapy, only 20-40% will conceive. While receiving FSH therapy, you'll also need to be monitored through blood tests (to check estrogen levels) and ultrasound (to check follicle growth). Multiple births are also common with both drugs.

Other Treatments for PCO

In many PCO women, weight loss is considered the "cure." However, when infertility is a concern and a PCO patient wants to conceive, weight loss is not really a realistic short-term treatment because it's a slow, time-consuming process. If you have PCO and are being treated with fertility drugs, you may be able to reverse your fertility through natural weight loss for future pregnancies. You'll need to see a nutritionist and design a weight loss program that's in tune with your lifestyle.

If the ovaries have large cysts on them, some fertility specialists may want to try to cauterize the ovary in about 8-10 small spots through laparoscopic surgery. Roughly 62% of PCO women who undergo it successfully go on to conceive, and when the surgery is combined with fertility drug therapy, the pregnancy rates are as high as 80%.

In some PCO women, androgens are also produced in the adrenal glands. Under these circumstances, your doctor may want to put you on a corticosteroid to suppress the adrenal gland, lowering the production of androgens. This will help induce ovulation as well.

Bromocriptine, which suppresses prolactin, will be given to 15-20% of all PCO women. The high levels of estrogen associated with PCO commonly cause hyperprolactinemia.

Treating Hirsutism

Because one of the unpleasant symptoms of PCO is hirsutism, which results in excessive male-patterned hair growth on the face, navel, or breasts, many women will want treatment. An antiandrogen drug, which is available in pill or cream form, will take care of the hair growth problem. You'll need to discuss the exact dosage of this drug with your doctor. Hair growth should slow down after about five months on the drug.

In the interim, electrolysis is the most effective treatment for hair growth on the face, navel, or breasts. Make sure you go to a reputable clinic and ask to talk to past clients. Sloppy electrolysis can result in burning and other skin problems.

The Insulin Connection

It has recently been discovered that insulin resistance and polycystic ovary syndrome go hand-in-hand. Women with insulin resistance are either at risk for, or have been diagnosed with, Type 2 diabetes. Lowering insulin in women with polycystic ovary syndrome seems to help restore menstrual cycles and lower male hormone levels. Oral hypoglycemic agents used to treat Type 2 diabetes are now being used to treat PCO. Only about half the women diagnosed with PCO have insulin resistance, which means that your body is not responding properly to the insulin produced by your pancreas gland.

Before you're placed on an insulin-lowering drug, ask your doctor about how diet and exercise can help your body use insulin more efficiently. You should also ask how insulin-lowering drugs affect pregnancy, and make sure you're aware of all the side effects of these powerful drugs.