POLYCYSTIC OVARY SYNDROME (PCOS) – PATIENT INFORMATION

WHAT IS POLYCYSTIC OVARY SYNDROME?

- Polycystic ovary syndrome (PCOS) is a complex disorder of the reproductive hormones and metabolism in women. It is very common, occurring in 7-10% or reproductive age women, and it is the most common cause of irregular menstrual cycles and infertility in women in their reproductive years.
- PCOS often begins around the time of puberty or after weight gain
- PCOS can have three general types of effects:
    - Cosmetic – acne, hair growth on the face, chest, and abdomen
    - Reproductive – irregular or absent menstrual cycles, infertility
    - Metabolic – changes in blood pressure, blood cholesterol, and glucose (sugar) metabolism that may predispose to problems like heart disease, stroke, and diabetes

HOW IS PCOS DIAGNOSED? WHAT TESTING IS REQUIRED?

- PCOS is a syndrome, or group of symptoms. The exact cause is unknown. There is disagreement about the precise criteria for diagnosis
- A group of experts from the National Institutes of Health (NIH) proposed the following criteria which are used by most endocrinologists in the US:
    1. *Menstrual disturbance* – irregular or absent menses
    2. *Hyperandrogenism* – elevated effects of androgens (masculinizing hormones) manifest by acne, extra hair growth, balding, and/or elevated blood androgen levels (e.g. testosterone)
    3. *Exclusion of other causes* – such as pregnancy, thyroid problems, high prolactin levels, early menopause
- To diagnose PCOS, your doctor will typically listen to your history and will perform a physical exam. Blood testing is typically performed to evaluate androgen levels and to exclude other causes of irregular menstrual cycles.
- Once your doctor is sure you are not pregnant, you may be asked to perform a "progesterone withdrawal challenge." For this test, you will take a progesterone (e.g. Provera, medroxyprogesterone, Prometrium) daily for 10 days. Most women with PCOS will have menstrual bleeding within several days after the progesterone is stopped.
- An ultrasound of the ovaries to look for cysts *is not required* to be diagnosed with PCOS (but can be useful in certain circumstances). This is because 25% of women with PCOS may have normal appearing ovaries (but will still respond to treatment) and 25% of women without PCOS have cystic ovaries.

WHAT CAUSES PCOS?

- The precise cause of PCOS is unknown, and likely there are multiple factors involved.
- A key feature of PCOS is *insulin resistance*. Insulin is a hormone secreted by the pancreas and is involved in the metabolism of sugar and fat. Specifically, insulin signals the fat cells and muscle cells in the body to take sugar (and fat) out of the blood. When insulin resistance develops, these cells stop responding normally to the insulin signal. The body tries to overcome this resistance by making more insulin. As long as the body can make enough insulin, the blood sugar stays normal and diabetes does not develop. However, the high insulin level has adverse effects on the ovaries and disrupts the menstrual cycle.

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WHAT IS THE TREATMENT FOR PCOS?

PCOS may be treated with lifestyle changes, medications, or both. The choice of therapy depends on many factors, including desire for pregnancy, preference for medical vs. non-medical therapy, and individual circumstances.

Lifestyle modifications

- Healthy eating. The diet should be adjusted to provide good nutrition and to limit saturated fat. For women who are overweight, portion sizes and calories should be restricted to help promote weight loss.
- Exercise. Regular aerobic exercise can reduce insulin resistance and help promote normal metabolism and menstrual cycles. Ideally you should obtain 30 minutes of exercise on most days of the week (all in one session or in multiple smaller sessions). You may wish to discuss with your doctor whether you need any additional testing, like a treadmill test, before beginning an exercise program.

Medications

Medications may be used to help treat the effects of PCOS, and are tailored to each individuals needs, desire for pregnancy, etc.

- To treat insulin resistance
  - Metformin (Glucophage)
  - Rosiglitazone (Avandia)
  - Pioglitazone (Actos)
- To treat androgen excess
  - Birth control pills
  - Spironolactone (Aldactone)
  - Finasteride (Propecia)
- To treat infertility
  - Metformin (Glucophage)
  - Rosiglitazone (Avandia)
  - Pioglitazone (Actos)
  - Clomiphene (Clomid)
  - "Gonadotropin" injections (Pergonal, hCG, others)

WHAT IF I BECOME PREGNANT WHILE ON MEDICATION?

- If you become pregnant while taking medication to treat PCOS, please notify your doctor to discuss your medications. *You should immediately stop birth control pills, spironolactone (Aldactone), and/or finasteride (Propecia)* if you are on any of these, as they may adversely affect the developing baby.
- There is some evidence that metformin may protect against early pregnancy loss in women with PCOS. Please discuss with your doctor whether you should continue this for the first trimester of pregnancy.

ADDITIONAL SOURCES FOR INFORMATION

Hormone Foundation Website – www.hormone.org