

Roswell Obstetrics and Gynecology
A Division of Atlanta Women's Health Group
770 751-3600

Treatment of Insulin Resistance (PCOS)

Insulin Resistance (IR)

What is it?

Insulin resistance is a disorder (often inherited) whereby higher than normal insulin levels are needed to maintain normal blood sugars. It is not known what causes insulin resistance, but it may be inherited and influenced by other factors.

What are the risk factors and symptoms?

Many people with insulin resistance have a family history of Type II (adult-onset) diabetes or other symptoms of insulin resistance. Patients who are at their ideal body weight can have insulin resistance, but the condition is most commonly found in overweight patients. Men and women can have insulin resistance, but women have more symptoms because high insulin levels can cause the ovaries to work poorly. The most common symptoms of insulin resistance and ovulation dysfunction (often called PCOS) include absent or irregular periods with or without infertility, acne, male-type hair growth, and weight gain. Insulin resistance is also associated with cholesterol problems, so a lipid profile is recommended (after 12 hours of fasting).

Diagnosis

Insulin resistance causes elevated fasting insulin levels (the easiest way) or elevated insulin levels after drinking glucola (which we'll order if you pass the fasting insulin test). We'll also measure your blood sugar (glucose) levels. The glucose levels will determine if you've already developed Type II diabetes, in which case we'll refer you to a medical endocrinologist for diabetes management.

Treatment guidelines:

1. Current first line therapy for insulin resistance is a combination of diet, exercise, gradual weight loss (if you are overweight), and an insulin sensitizing medicine such as Glucophage
2. Glucophage, an insulin sensitizer, is begun at a low dose (500mg per day) and increased weekly until you attain around 850mg twice a day OR the medicine gives you unacceptable abdominal crampiness, in which case you take the highest dose you can tolerate

3. Glucophage XR (extended release) is the newest formulation of the medicine and is taken at the evening meal only, and some of our patients have less gastrointestinal side effects on Glucophage XR
Important! You should temporarily stop either Glucophage or Glucophage XR if for any reason you become dehydrated.
4. Patients who cannot tolerate or do not respond well to Glucophage (either form) are usually started on Avandia, a second insulin sensitizer
5. Avandia does not usually cause abdominal side effects but you will need to have periodic liver function tests while on Avandia
6. Aerobic exercise (three to four times a week for 30 minutes) is recommended
7. A diabetes-type diet is mandatory for successful treatment of insulin resistance - we are currently recommending you purchase Sugar Busters by Steward et al or The Insulin Resistance Diet to learn how to decrease your consumption of simple sugars. As alternatives, Northside Hospital offers lectures on low glycemic diets and some independent dieticians will work with you.
8. Gradual weight loss is encouraged for you if you are overweight

If you are not trying to conceive, we'll need to see you in the office in 3-4 months to evaluate your response to the initial treatment. We'll want proof that your initial symptoms are improving! Additional therapies may also be required to help relieve your PCOS symptoms.

However, if you are trying to conceive, after two months of therapy, we'll evaluate your ovulation function (see evaluation of ovulation function below). This is necessary because some patients will require additional medicine in addition to diet, exercise, weight loss, and an insulin resistance medicine.

Evaluation of Ovulation Function (patients trying to conceive)

(Remember, if you are not having periods and you have a negative pregnancy test you are NOT ovulating at all. Therefore you'll need no initial testing by progesterone blood levels, ovulation test kits, or BBT graphing). However, for patients with irregular or abnormal periods we'll need to determine if therapy is working! This can be determined by blood progesterone levels.

Progesterone levels are drawn 5-7 days after suspected ovulation. However, you have to be SURE of your ovulation date or the results will be hard to interpret. To improve the chance of an accurate ovulation date we recommend:

1. Basal body temperature graph
 - a. This involves you taking your temperature after your longest stretch of sleep, but before you get up out of bed or perform any activity

- b. The temperature is recorded on a graph which we can provide
 - c. You can use a digital Fahrenheit thermometer
 - d. Your basal temperature increases after you ovulate, an average of 0.5 degrees above the temperature before ovulation, **and this increase continues until your period begins**
 - e. Failure to see a sustained premenstrual temperature rise is very suggestive of failure to ovulate
 - f. Progesterone levels are drawn on the 5th, 6th, or 7th day of consistent temperature rise
 - g. BBT graphs can be difficult to interpret so please fax us your graph if you have any questions
2. Ovulation test kits

Neither BBT graphs nor ovulation test kits work for everyone. Some women use other clues that can indicate ovulation. Use whatever works best for you!

If you ovulate and have an excellent progesterone blood level, we'll give you 3- cycles to conceive before recommending further evaluation.

However, if diet, exercise, gradual weight loss (if overweight), and Glucophage do not induce effective ovulation, additional medicine such as Avandia and Clomid can be added.

In some instances all of these interventions will fail to induce ovulation, in which case, all is not lost. The last option is referral to a reproductive endocrinologists' practice for consultation regarding gonadotropin therapy (infertility "shots").