

Insulin Resistance : A Cause for Not Ovulating

Last Updated Tuesday, 02 March 2010

There are many reasons why a woman may not ovulate. Some women are resistant to the hormone insulin. Insulin is a hormone produced by the pancreas that helps keep blood sugar under control. Insulin is part of a complex system that keeps the blood sugar low. It is estimated that 25% to 50% of overweight adults have insulin resistance.

If blood sugar, also known as blood glucose levels, become too high, then a person is said to have diabetes. There are two main causes for diabetes: failure to make insulin (Type 1 Diabetes) and becoming resistant to the effects of insulin (Type 2 Diabetes).

In women, there are two common conditions that may result in insulin resistance: PCOS , also known as polycystic ovary syndrome , and obesity . Some women with PCOS are also obese. This can intensify the symptoms of PCOS. Women may also be obese and have insulin resistance without having PCOS. Women with PCOS or obesity or both problems will commonly have problems with ovulation.

Common signs that a woman may not be ovulating involve disruption of the normal pattern her menstrual cycles. Women who do not ovulate will often note absence of their periods, infrequent periods or irregular periods. Rarely, a woman with regular monthly periods may not be ovulating.

Diagnosis of insulin resistance

Diagnosis of insulin resistance can sometimes be challenging. This is due to wide variations in the levels of the hormones needed to assess for insulin resistance.

When insulin resistance occurs, the body needs a higher level of insulin to keep the blood glucose under control. Therefore, high insulin levels are frequently seen in this condition. Other possible signs of insulin resistance include:

Blood tests

- High triglyceride levels
- A low glucose to insulin ration
- High leptin levels
- Low adiponectin levels
- High fasting blood glucose
- Abnormal oral glucose tolerance test

Physical signs

- Obesity

- A large diameter of the waist
- Acanthosis nigricans – a dark velvety appearance of the skin usually around the neck, under arms or groin

It is very important to note that in some women with insulin resistance, all of these signs and symptoms may be absent. There are more sensitive although complicated ways to test for insulin resistance. These are not usually done in clinical practice. These are typically performed when researchers are conducting studies.

Treating insulin resistance for ovulation

If insulin resistance is the cause for a woman's anovulation (not ovulating) then it stands to reason that improving the insulin resistance or lowering the insulin levels may be successful at causing ovulation to return. In fact this does seem to work…sometimes. Methods for lowering insulin resistance that have resulted in the resumption of ovulation include:

- Weight loss
- Exercise (even without weight loss)
- Medications
 - Metformin (Glucophage, Fortamet)
 - TZDs (Actos, Avandia)

A 5% to 10% loss in body weight has been shown to improve insulin levels and thereby reduce the risk of developing certain chronic diseases, such as type 2 diabetes mellitus and heart disease and improve the chance for ovulation in women.

There is no evidence that a low carbohydrate diet helps improve insulin resistance any better than any other type of diet. The key is weight loss.

Large, multicenter university studies have found that medication treatment of insulin resistance can work to achieve a live birth but is not as efficient as fertility treatments such as clomid .

Infertile women with anovulation and insulin resistance may consider treatment of insulin resistance as one alternative to improve their fertility. Women who are not interested in childbearing may also consider treatment of insulin resistance to help reduce the risk of developing diabetes.

Other articles involving insulin resistance:

[Actos and Avandia for PCOS](#)

[Metformin for PCOS](#)

Metformin in Pregnancy

Alternatives to metformin (glucophage) for treating insulin resistance