

PATIENT'S FACT SHEET

Insulin Sensitizing Agents and PCOS

Polycystic ovarian syndrome (PCOS) is a very common reproductive disorder. Women with PCOS frequently have irregular menstrual cycles, excessive body hair, are overweight, and suffer from infertility. Many women with PCOS have a decreased sensitivity to insulin for which their bodies compensate by overproducing insulin. The resulting high levels of insulin may contribute to excessive production of androgens (male hormones, such as testosterone) and contribute to ovulation disorders. In addition to reproductive problems, women with PCOS have a higher chance of developing medical problems such as Type 2 (non-insulin dependent) diabetes, high blood pressure, and heart disease. By the age of 40, up to 40% of PCOS patients develop impaired glucose tolerance or clinical diabetes.

Given the strong evidence that excess insulin plays a role in the development of PCOS, it is reasonable to assume that reducing circulating levels of insulin may help restore normal reproductive function. This may be accomplished by weight loss, unproved nutrition, and exercise. These behavioral changes should be the first lines of therapy for an overweight woman with PCOS.

Recently, new drugs approved by the FDA for the treatment of Type 2 diabetes have shown promise for PCOS. These drugs, known as **insulin sensitizing agents**, have been shown to improve the body's response to insulin, thereby reducing the need for excess insulin and restoring the levels to normal. The best studied insulin sensitizing agent available in the United States for women with PCOS is **metformin** (Glucophage[®]), a biguanide. Metformin reduces circulating insulin and androgen levels and restores normal ovulation in some women with PCOS. Even if metformin alone does not restore ovulation, it may improve a woman's response to fertility drugs. Gastrointestinal irritation, especially diarrhea, is a common side effect. These symptoms usually improve after a few weeks. Lactic acidosis is a rare but serious adverse effect of metformin. Metformin is not recommended for patients with kidney, lung, liver, or heart disease.

Present data suggest the use of insulin sensitizing agents for ovulation induction in PCOS patients who want to conceive. Because these medicines correct the underlying metabolic abnormalities associated with PCOS, it is plausible that their long-term use may delay the emergence or reduce the likelihood of developing Type 2 diabetes and cardiovascular disease. Since data are lacking, however, long-term use of insulin sensitizing agents for this purpose cannot be recommended at present.