

METFORMIN FOR THE TREATMENT OF POLYCYSTIC OVARY SYNDROME

Susan R Davis ©

The cause of polycystic ovarian syndrome (PCOS) is still not well understood. However a significant proportion of women with PCOS have resistance to the action of insulin such that they overproduce insulin. This results in higher levels of insulin in the blood after eating.

Increased insulin appears to stimulate the ovaries to produce testosterone and affect ovulation. It also lowers the level of a protein in the blood called sex hormone binding globulin (SHBG). This protein, SHBG binds testosterone in the blood stream so that testosterone cannot move freely into cells. If the level of SHBG is low, then more of the testosterone in the blood can move into the cells and have effects such as increased body hair growth or oiliness of skin and acne.

METFORMIN is a drug that was developed to treat diabetes. Its major effect is to make the body more sensitive to the action of insulin so that insulin levels fall. Thus it is also used in the management of PCOS to lower insulin levels.

Unlike other drugs used to treat diabetes, metformin does not cause low blood sugar and therefore it is very safe to use.

The target dose for effectiveness is between 1500-2500mg/day. Many women have gastrointestinal side effects with high dose metformin so it is usually commenced at a low dose (250mg twice a day) which is increased every 2 weeks. It should also be taken with a meal to reduce the likelihood of side effects.

Metformin is used in PCOS women for

1. Infrequent menstrual cycles- in order to restore ovulation
2. Infertility – to restore ovulation
3. Obesity- to enhance insulin sensitivity and thus assist with weight loss. Metformin may also have a slight appetite suppressant effect. Weight loss associated with the use of metformin usually involves loss of fat tissue(Stumvoll et al 1995)
4. Excess body hair (hirsutism)

Side effects:

The most commonly reported are nausea, vomiting, diarrhea which may be due to build up of lactic acid in the bowel. These may be prevented by taking a smaller dose more frequently.

Metformin may interfere with the absorption of Vitamin B12 and therefore red blood cell Vitamin B12 levels should be checked annually.

Lactic acidosis is a rare side effect and usually only seen in people with poor kidney function.

Metformin therapy should be temporarily stopped in the following situations:

1. Before an X-Ray that will involve the use of iodine contrast injection
2. Before any surgery that involves fasting and can be restarted when fluid intake is again normal.
3. If there may be a drug interaction (for example cimetidine)