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# Polycystic Ovary Syndrome or PCOS

Fact Sheet 24

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**Polycystic ovary syndrome is a relatively common problem among women who experience difficulty in becoming pregnant. It is associated with an increased risk of developing type 2 diabetes (adult-onset type of diabetes). Effective treatment to improve the chance of pregnancy, reduce the risk of diabetes and reduce the severity of its other symptoms (see below), is available.**

## What is PCOS?

A woman with PCOS usually has irregular periods, increased amounts of active male hormone in her blood, which can cause acne and growth of unwanted body hair, and an ultrasound scan may show many small cysts in her ovaries. These symptoms occur in variable severity and may not be present constantly. Occasionally other gland problems may cause these symptoms so the diagnosis of PCOS can only be made when other gland disease has been ruled out by specific tests.

## Possible cause of symptoms of polycystic ovary syndrome

Many women with PCOS have an increased amount of insulin in their blood. This happens because their body does not respond to the normal amount of insulin. This condition is called insulin resistance.

Insulin resistance means a higher than normal amount of insulin is needed in the blood to control the level of sugar.

Insulin resistance is genetically controlled and made worse by weight gain. Higher than normal blood levels of insulin have a direct effect on the way the ovary works and this results in irregular ovulation, irregular periods and increased production of male hormones.

## Features of PCOS in more detail

### Polycystic ovaries

An ultrasound scan shows many small cysts in one or both ovaries. They are usually less than 8mm in diameter and may contain eggs. More than 20 per cent of all potentially fertile women have polycystic ovaries however less than half of these have the other features of the PCOS. Many women do not know they have polycystic ovaries.

These small cysts usually do not cause any symptoms, rarely grow large and may disappear only to be replaced by other cysts. These small cysts do not need to be removed by surgery. It is important to understand that in all fertile women, one cyst containing an egg (called a follicle) grows to about 20mm in diameter each month before ovulation.

The possibility of having polycystic ovaries is probably present from birth. Sometimes they may be seen in ovaries before puberty but are usually not found until a woman goes to her doctor with one of the symptoms described below. They are less obvious in a woman who has been using an oral contraceptive pill and they become more obvious after weight gain.

### Irregular periods

Menstrual periods may be irregular, heavier than usual or prolonged. They may occur only once every few months or in some women not at all. This means ovulation does not occur regularly.

### Less frequent ovulation

Instead of ovulating once each month, a woman with PCOS may ovulate irregularly. This means less chances per year to become pregnant compared to women who have regular periods. Treatment described below will usually make ovulation happen when required.

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### Miscarriage

PCOS is now recognised as one of the conditions associated with an increased risk of miscarriage. This risk is higher in women who are overweight.

### Acne and unwanted body hair

The blood level of the male hormone testosterone may be slightly higher in women with the PCOS than in other women. This causes acne, greasy skin and unwanted hair growth on the face, chest and abdomen. The blood levels of testosterone in women with PCOS are still much lower than the levels found in men.

### Body weight

Weight gain is common in women with the PCOS, however not all such women are overweight. Some women with polycystic ovaries only develop symptoms of the PCOS when they put on weight. There are many other health risks associated with being overweight, including the risk of developing diabetes in pregnancy, as well as increased risks of heart disease, diabetes and arthritis later in life.

## Long-term health with PCOS

Many women with PCOS have Metabolic Syndrome which consists of high blood pressure, high blood cholesterol and insulin resistance leading to type 2 diabetes. Therefore they will have an increased risk of heart disease and stroke. These risks are reduced if blood pressure, cholesterol and blood sugar levels are well controlled and by not smoking.

In general women with PCOS do not have an increased risk of cancer of the ovaries. Long-term treatment with clomiphene to stimulate the ovaries may very slightly increase the risk of ovarian cancer. Women who do not have regular periods may have a slightly increased risk of cancer of the endometrium (the internal lining layer of the womb). This can occur when the endometrium becomes too thick. Regular shedding of the endometrium by having regular periods, prevents endometrium cancer. If the endometrium appears thick on an ultrasound scan or if very irregular, prolonged bleeding occurs, investigation and treatment is needed.

## Treatment for PCOS

PCOS should not be regarded as a disease, rather it is a inborn condition of the body of some women and therefore cannot be permanently cured. Many of the symptoms of PCOS are connected with the high blood level of insulin. If the insulin level can be reduced many of the symptoms disappear. Blood insulin levels can be reduced by increased physical fitness, maintaining a normal body weight and some drugs (e.g. Metformin). Drug treatment is less effective than physical fitness and weight control. Minimum physical activity needed is 30 minutes of walking daily for at least five days per week. Body weight should be within the range of a normal Body Mass Index (BMI).

In addition to improved physical fitness and weight loss, there is treatment for:

### Irregular periods

For women with PCOS who have no wish to become pregnant menstrual periods may be controlled by a low dose oral contraceptive pill. Women who cannot take the pill should try a progesterone-only treatment (for example Provera or Primolut N) for at least 10 days each month. Any irregular bleeding should be checked by a doctor who may advise an ultrasound or even a curettage. A pap smear should also be taken once every two years.

### Difficulty in becoming pregnant

In women with PCOS, difficulty in conceiving is most likely due to lack of regular ovulation. However other causes of infertility such as blocked tubes or a partner with a low sperm count may also be present. When ovulation is irregular or not occurring at all, drug or hormone treatment may be required. The most common drug treatment is clomiphene citrate (Clomid or Serophene) which is a tablet taken for five days early in the menstrual cycle. Clomiphene can have side-effects which prevent the passage of sperm through the cervix or decrease the growth of the endometrium. Therefore although clomiphene may cause ovulation, pregnancy will not always occur. The risk of having twins is slightly increased by the use of clomiphene.

If clomiphene plus increased exercise and some weight loss does not help, hormone injections may be used. A drug Metformin (Diabex, Diaformin), which helps reduce blood insulin levels, can be added, however recent scientific studies found this drug made very little difference to the chance of ovulating when clomiphene was being used. The hormone injections are FSH and LH. These two hormones are called the gonadotrophins. They are normally produced in the body by the pituitary gland and can also be synthesised in the laboratory. FSH is responsible for stimulating the growth of follicles (cysts containing eggs) and LH stimulates the release of the egg from the follicle. Polycystic ovaries are usually very sensitive to stimulation by these hormones and often more than one follicle will grow when these injections are given. Therefore injection treatment is always commenced with a low dose and the woman is carefully monitored by blood tests and ultrasound scans. If monitoring shows too many follicles are developing and the risk of a multiple pregnancy is high, the treatment is stopped and contraception is needed for several days.

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Women with polycystic ovaries given gonadotrophin injections have a risk of developing a serious, uncommon condition called ovarian hyperstimulation syndrome (OHSS). This condition occurs if too many follicles are stimulated resulting in abdominal swelling, pain, nausea and vomiting. Careful monitoring and early detection of this situation is essential to avoid any serious outcome.

When other treatments have not been successful in causing a pregnancy, in vitro fertilisation (IVF) may be offered to women with PCOS. IVF involves collecting eggs from a woman's ovaries after she has been given gonadotrophin injections, then fertilising them with her partner's sperm in the laboratory. IVF also carries the risk of ovarian hyperstimulation syndrom and a woman having this treatment must also have careful monitoring.

Laser or electrocautery treatment of the ovary done during a laparoscopy has also been used to induce ovulation in women with PCOS. It has only a short-term benefit and carries the risk of damage or adhesions involving the ovaries.

## Skin problems

Excessive body hair may be reduced by cosmetic treatments (waxing, electrolysis or laser) or by taking a combination of tablets. Oestrogen (female hormone) is combined with an anti-male hormone in some oral contraceptive pills (Diane 35, Brenda, Yasmin) or they be taken in a bigger dose in separate tablets. This treatment must be taken for more than 12 months to see some benefit on reducing hair growth. These tablets are contraceptive and therefore of no use to women trying to become pregnant. Cosmetic treatments may be used while waiting for the hormone treatment to work.

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