

## Polycystic Ovary Syndrome (PCOS)

### What is polycystic ovary syndrome?

Polycystic ovary syndrome (PCOS) is a condition which can affect a woman's menstrual cycle, fertility, hormones, and aspects of appearance. It can also affect long-term health. Estimates of how many women it affects vary widely from 2 to 26 in every 100 women

### What are polycystic ovaries?

Polycystic ovaries are slightly larger than normal ovaries and generally have twice the number of follicles (small cysts). Polycystic ovaries are very common affecting 20 in 100 (20%) of women. Having polycystic ovaries does not mean you have polycystic ovary syndrome. Women with PCOS have symptoms as well as polycystic ovaries.

### What are the symptoms of PCOS?

- Irregular periods or no periods at all
- Difficulty becoming pregnant (reduced fertility)
- Having more facial or body hair than is usual for you (hirsutism)
- Being overweight, rapid increase in weight, difficulty losing weight
- Oily skin, acne
- Depression and mood swings

The symptoms may vary from woman to woman. The strongest single risk factor for PCOS is overweight or obese

### What causes PCOS?

The cause of PCOS is not yet known. PCOS sometimes runs in families. If any of your relatives (mother, aunts, sisters) are affected with PCOS, your own risk of developing PCOS may be increased.

The symptoms of PCOS are related to abnormal hormone levels. Hormones are chemical messengers which control body functions. Testosterone is a hormone which is produced by the ovaries. Women with PCOS have slightly higher than normal levels of testosterone and this is associated with many of the symptoms of the condition.

Insulin is a hormone which regulates the level of glucose (a type of sugar) in the blood. If you have PCOS, your body may not respond to the hormone insulin (known as insulin resistance), so the level of glucose is higher. To prevent the glucose levels becoming higher, your body produces more insulin. High levels of insulin can lead to weight gain, irregular periods, infertility and higher levels of testosterone.

This disorder affects the function of the ovaries, which produce eggs and the hormones oestrogen and progesterone. Other imbalances affect hormones produced by the brain and include elevated levels of luteinising hormone (LH) and a relative deficiency of follicle-stimulating hormone (FSH), both of which

control the release of eggs from the ovaries. As the ovaries aren't working properly, eggs may not be released in a regular monthly cycle.

### **How is PCOS diagnosed?**

PCOS is a syndrome where at least two of the following occur:

- Polycystic ovaries - At least 12 follicles (tiny cysts measuring 2 to 9 mm) develop in your ovaries (Polycystic means 'many cysts') and / or increased ovarian volume (>10cm<sup>3</sup>).
- Ovulation may not occur regularly. Some women with PCOS do not ovulate at all. This can lead to irregular, infrequent periods or no periods.
- More facial or body hair than is usual for you or acne and / or blood tests which show higher testosterone levels than normal.

### **PCOS in adolescence**

There is no agreement on how to diagnose PCOS in adolescence. In fact several features of PCOS may be in evolution or only maybe transitory findings during the transition from childhood to adulthood. It has therefore been suggested that a diagnosis of PCOS should not be made until 8 years after the first period.

### **How is it treated?**

The cysts in polycystic ovaries are not harmful and do not need surgical removal.

If overweight, losing a few pounds may be enough to get the ovaries working properly again, as the more fat is carried, the higher your insulin levels are likely to be.

Some women who have no periods, or infrequent periods, do not want any treatment for this. However, the risk of developing cancer of the uterus (womb) may be increased if you have no periods for a long time or have less than four periods a year. Regular periods will prevent this increased risk to the uterus in women with PCOS.

Possible treatments include the oral contraceptive pill (either combined pill or minipill), progestogen tablets taken to induce regular withdrawal bleeds or a progestogen releasing Intrauterine system.

Oral contraceptive pills such as Dianette, Yasmin or YAZ are often used as they help suppress testosterone levels and control acne and body hair growth. Local cream called Vaniqa can be used for facial hair growth. Finally, physical treatments such as electrolysis and laser hair removal are also helpful for body hair growth.

**Does PCOS effect fertility and treatment if unable to conceive:** Irregular periods indicate irregular ovulation Half of these women will suffer from Subfertility because of not ovulating. The first treatment that's usually tried is stimulation of the ovary with the tablet Clomiphene to induce ovulation. If this fails, injections of FSH may be tried to trigger ovulation. If drug treatment doesn't work, surgery that involves cauterising the ovary is very successful in triggering ovulation. It's vital; however, that ovarian stimulation is monitored by ultrasound in a fertility unit as women with PCOS tend to develop a high number of eggs. This not only raises

their risk of a multiple birth, but also of a potentially serious condition known as ovarian hyperstimulation syndrome (OHSS).

Remember, you are much less likely to become pregnant if you are obese. If you are obese or overweight, then losing weight is advised in addition to other fertility treatments.

Please be aware that fertility treatment is not available at the Norfolk and Norwich University Hospitals.

### **What are the long-term health risks?**

If you have PCOS, you are at greater risk of developing the long-term health problems discussed below.

#### **1) Insulin resistance and diabetes**

If your blood glucose does not stay normal, this can lead to diabetes. One or two in every ten women with PCOS go on to develop diabetes at some point. If the diabetes is untreated, this can cause damage to organs in the body.

If you have PCOS, your risk of developing diabetes is increased further if you:

- Are obese (a body mass index (BMI) of over 30).
- Are over 40 years of age
- Have relatives with diabetes
- Developed diabetes during a pregnancy (known as gestational diabetes)

If you are diagnosed with diabetes, you will be given advice about your diet and may be prescribed tablets or insulin injections.

#### **2) High blood pressure**

Women with PCOS tend to have high blood pressure, which is likely to be related to insulin resistance and to being overweight rather than to the PCOS itself. High blood pressure can lead to heart problems and should be treated.

#### **3) Cancer**

If you have fewer than three to four periods a year, the lining of the womb (endometrium) can thicken, and this may lead to endometrial cancer in a small number of women.

To protect the lining of the womb using the progesterone hormone is recommended. Your doctor will discuss the options with you. This may include a five-day course of progestogen tablets used every three or four months, taking a contraceptive pill or using the intrauterine contraceptive system Mirena<sup>®</sup>). The options will depend on whether you are trying for a baby.

There does not appear to be an association with breast or ovarian cancer and no added surveillance is required.

#### **4) Depression and mood swings**

The symptoms of PCOS may affect how you see yourself and how you think others see you. It can lower your self-esteem.

## 5) Snoring and daytime drowsiness

PCOS can lead to fatigue or sleepiness during the day. It is also associated with snoring.

### What can I do to reduce long-term health risks?

#### ***Have a healthy lifestyle***

The main ways to reduce your overall risk of long-term health problems are to:

- Eat a healthy balanced diet. This should include fruit and vegetables and whole foods (such as wholemeal bread, whole-grain cereals, brown rice and whole-wheat pasta), lean meat, fish and chicken. You should cut down the amount of sugar, salt, and caffeine that you eat and drink. You should not drink more alcohol than is recommended (14 units a week for women).
- Eat meals regularly, especially breakfast.
- Take exercise regularly. Adults (18-64 years) should aim for a minimum of 150 to 300 minutes of moderate-intensity activities or 75 to 150 minutes of vigorous-intensity aerobic activity per week. Adolescents should aim for at least 60 minutes of moderate- to vigorous-intensity physical activity per day

Your GP or practice nurse can provide you with full information on eating a healthy diet and exercise.

You should aim to keep your weight to a level that is normal. BMI is the measurement of weight in relation to height and you should aim to keep your BMI between 19 and 25. To calculate your BMI, follow this link:

[www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx](http://www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx).

If you are overweight, it would be helpful to lose weight and maintain your weight at this new level. If your BMI is more than 30, discuss ways of losing weight, including weight-reducing drugs, with your GP, practice nurse or pharmacist.

The benefits of losing weight include:

- A lower risk of insulin resistance and developing diabetes.
- A lower risk of heart problems
- A lower risk of cancer of the womb
- More regular periods
- An increased chance of becoming pregnant.
- A reduction in acne and a decrease in excess hair growth over time
- Improved mood and self-esteem.

You only must lose a small amount of weight to make a difference to your symptoms and your health.

#### ***Have regular health checks***

Once you have a diagnosis of PCOS, you need to have regular health checks with your doctor for any early signs of health problems like:

- **Diabetes:** Women with PCOS over the age of 40 should be offered a blood sugar test once a year to check for signs of diabetes. If your BMI is 30 or over or you have a family history of diabetes, you may be offered testing for diabetes earlier than age 40.
- **Cancer of the womb:** If you have not had a period for a long time (over 4 months) or have irregular bleeding, it is advisable to see your doctor. You may be offered a referral for further tests that may include an ultrasound scan of your womb (uterus) or treatment to make you have a period if they are very irregular.
- **High blood pressure:** Discuss with your doctor how often you should have your blood pressure checked and whether you should have blood tests to check your cholesterol levels.
- **Depression and psychological problems:** You can be referred to a counsellor or trained specialist if necessary.

### Is there a cure?

Medical treatments aim to manage and reduce the symptoms or consequences of having PCOS. Medication alone has not been shown to be any better than healthy lifestyle changes (weight loss and exercise).

Many women with PCOS successfully manage their symptoms and long-term health risks without medical intervention. They do this by eating a healthy diet, exercising regularly and maintaining a healthy lifestyle.

### Further help and advice

- European Society of Endocrinology (ESHRE) International evidence-based guideline for the assessment and management of polycystic ovary syndrome 2023
- Royal College of Obstetricians and Gynaecologists (RCOG) website
  - Information leaflet on 'PCOS: what it means for your long-term health' June 2015
  - Polycystic Ovary syndrome, Long term consequences (Green top guideline no.33), November 2014
- Verity  
Web: <http://www.verity-pcos.org.uk/>  
Verity is a UK charity for women whose lives are affected by polycystic ovary syndrome.
- Polycystic Ovary Syndrome (PCOS) - Patient UK