

Polycystic Ovary Syndrome (PCOS)

The Royal College of Obstetricians and Gynaecologists states "It is recommended that lifestyle changes, including diet, exercise and weight loss, are initiated as the first line of treatment for women with PCOS for improvement of long-term outcomes".

What is Polycystic Ovaries Syndrome?

Polycystic Ovary Syndrome or PCOS is believed to affect 1 in 10 women in the UK with more than half of these women not displaying any symptoms.

With PCOS, the functioning of the ovaries is impacted. The ovaries are the reproductive organs and are responsible for the production of oestrogen, progesterone and a small amount of androgens. Oestrogen and Progesterone are responsible for regulating the menstrual cycle, whilst androgens are classed as "male" hormones which help to prevent fatigue and maintain a healthy sex drive.

PCOS diagnosis

PCOS is a "syndrome" or group of conditions whereby the ovaries and ovulation are affected. The three main features of PCOS include:

- **Irregular periods** – meaning the ovaries are not regularly releasing eggs.
- **Excess androgen levels** – high levels of "male" hormones in the body which may cause physical changes such as excessive facial or body hair.
- **Polycystic ovaries** – the ovaries become enlarged and contain many fluid-filled sacs that surround the egg.

*If you have at least two of these features, you may be diagnosed with PCOS.

Causes of PCOS

The exact cause of PCOS is unknown, however having a family history may increase your risk.

Symptoms of PCOS

The symptoms of PCOS vary for each individual, however the symptoms and signs will usually start to display themselves during your late teens or early-20's. Some of the symptoms may include:

- Irregular periods
- Difficulty getting pregnant due to irregular ovulation or failure to ovulate
- Excessive hair growth, usually on the face, chest, back or buttocks
- Weight gain
- Thinning hair or hair loss on the head
- Oily skin or acne
- Darkening on the skin around the neck, groin and under the breasts
- Headaches

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PCOS is related to abnormal hormone levels in the body, including the hormone insulin which is required to help regulate blood sugar levels. Many women with PCOS are resistant to insulin, meaning their body will need to produce more than normal to regulate their blood sugar levels. Due to the higher levels of insulin production, the body will then also start to produce more androgens as well.

Women with PCOS are also believed to have a higher level of inflammation within the body. Being overweight or obese can further increase the inflammation, resulting in a higher production of androgens. This is why maintaining a healthy weight or losing weight is often encouraged for those with PCOS.

PCOS and weight

It can be common for women with PCOS to experience weight gain. This is due to the reduced insulin sensitivity causing an increase in the production of androgens. Due to the high level of androgens this then results in weight gain, primarily around the abdominal region.

For women with PCOS, maintaining a healthy weight or reducing their body weight by 10% can help to improve regulation of their menstrual cycle.

Reducing your weight will also help to improve your insulin sensitivity, reducing your risk of developing type 2 diabetes, cardiovascular disease and it can also improve your fertility. However, with PCOS, weight loss can be difficult.

Our Basal Metabolic Rate (BMR) is the number of calories we burn at rest. For women with PCOS, their BMR can be reduced by 14-40%, meaning they will be burning fewer calories at rest compared to a woman without PCOS. This will often mean they will have to consume much fewer calories when trying to lose weight.

PCOS and fertility

With treatment, most women with PCOS are able to get pregnant. However, it can take time finding the right treatment.

The following treatments are available if you are trying to get pregnant. But if you do have concerns, speak with your GP for additional support and advice:

- **Contraceptive pill** – the contraceptive pill may be recommended to help increase the likelihood of regular periods.
- **Clomifene** – this medication is prescribed to encourage the monthly release of an egg from the ovaries.
- **Metformin** – Metformin is actively used to treat type 2 diabetes, however it also stimulates ovulation, encourages regular periods, and reduces your risk of miscarriage.
- **Laparoscopic Ovarian Drilling (LOD)** – under general anaesthetic your surgeon will make a small incision to treat by heat or laser the site producing androgens.

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Most women can be successfully treated with a short course of tablets taken at the beginning of each cycle for several cycles. However, if this is unsuccessful, you may be offered injections or IVF treatment.

As a result of PCOS, you may be at a greater risk of experiencing complications during pregnancy. This is particularly common in overweight or obese women; therefore, it is advised to lose weight before trying to get pregnant. Some complications may include:

- Hypertension (high blood pressure)
- Pre-eclampsia
- Gestational diabetes
- Miscarriage

Treatment for symptoms of PCOS

PCOS cannot be cured, however there are treatments available to help manage the symptoms. The features of your PCOS will determine the treatment you receive. Below are the potential treatment options for the associated symptoms, if you would like any further information, speak with your GP:

- 1. Unwanted hair growth or hair loss:** some medicines are used to 'block' the effects of androgens, whilst others slow the growth of unwanted hair.
- 2. Weight gain:** Weight loss can occur through regular exercise or reducing your caloric intake by cutting portion sizes/snacks. But, if you do feel you would benefit from additional support your GP will be able to advise on other options which may come in the form of dietary advice or medication.

- 3. Oily or acne-prone skin:** look after your skin by regularly cleansing, avoid exfoliating too regularly as this can encourage the production of sebum in the skin increasing the likelihood of spots.

- 4. High cholesterol:** Adhering to a Mediterranean based diet of oily fish, fruit, vegetables, and whole-grains can have a positive effect on your cholesterol levels. There are also medications available called statins which can help with cholesterol regulation.

Lifestyle changes to help manage PCOS

Exercise: The current recommendations for exercise are 150 minutes or moderate intensity or 75 minutes of vigorous intensity exercise each week, in addition to at least 2 strength sessions.

Exercises that build lean muscle have shown to be beneficial by improving insulin sensitivity. It can also increase sex-hormone binding globulin (SHBG) which works by binding the male hormone testosterone and reducing the effect the androgens have on the body.

It is advised to limit the amount of high-intensity interval training (HIIT) to a few times a week in 15–20 minutes bursts. HIIT adds stress onto the body which can negatively impact hormones.

Finally, research also supports the practising of Yoga on a weekly basis. Regular practise on a near daily basis has shown to improve menstrual cycle regularity and hormone production.

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Diet: The internet is awash with 'PCOS diets', most of which are low in carbohydrates. Although adhering to a low carbohydrate diet has shown to be beneficial for weight loss, it can be difficult to maintain long-term. Another risk with low carbohydrate diets is the reduced fibre intake, this can lead to worsening insulin resistance and a higher production of androgens.

In place of this, balanced diets focusing on Mediterranean principles have been encouraged along with low glycaemic index diets.

If you are wanting to improve your diet, we would recommend the following choices:

- Low GI carbohydrates for slow energy release to maintain blood sugar control – e.g. porridge oat, wholegrain bread or pasta, brown rice.
- Fruits and vegetables to increase fibre intake, opting for a range of colours.
- Lean protein e.g. fish, chicken, tofu, soy-beans, lentils to help with hormone production and improve blood sugar regulation.
- Good quality fats e.g. nuts, avocado, salmon.

Stress: Experiencing high levels of stress can negatively impact the adrenal glands in the body, encouraging them to produce more androgens such as testosterone.

Looking after your health and well-being, along with prioritising down-time can help manage with stress. Here are some resources with tips and information on how to look after your mental health.

Resources:

- NHS 5-ways to wellbeing: www.nhs.uk/mental-health/self-help/guides-tools-and-activities/five-steps-to-mental-wellbeing/
- MIND UK: www.mind.org.uk/information-support/tips-for-everyday-living/wellbeing/wellbeing/
- Smiling Mind: www.smilingmind.com.au/
- Mental Health Foundation: www.mentalhealth.org.uk/publications/how-to-mental-health