Dietary And Lifestyle Advice For Polycystic Ovary Syndrome (PCOS)

Dr Anni Tripathi, GP, Lifestyle Medicine Physician
Karine Stephan, Registered Nutritional Therapist

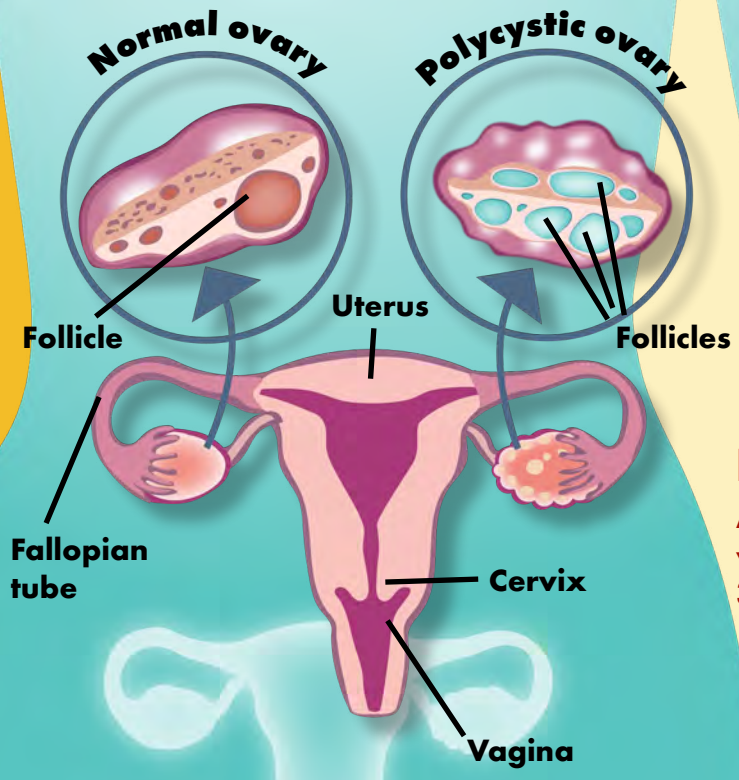
PLANT-BASED Health Professionals UK
Promoting Sustainable Health and Nutrition

What is PCOS?

It is an endocrine condition which affects women of the reproductive age, from teenage years through to menopause and beyond.

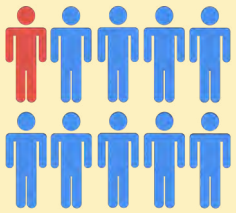
The exact cause is unknown, however, *insulin resistance causing increased androgen production* (including testosterone), or *local increased production of androgens by the ovary in response to signals from the brain are both likely mechanisms.*

Obesity may be a trigger factor
PCOS can run in families.



PCOS affects about 1 in every 10 women in the UK.

Up to 70% of affected women remain undiagnosed.



Common symptoms

Women may experience some or all of the following symptoms:

- **Irregular or absent periods due to less frequent ovulation**
- **Signs of excess androgens in the form of excessive facial or body hair, acne, hair loss on scalp**
- **Weight gain**
- **Insulin resistance***
- **Fertility problems**
- **Psychological issues including anxiety and depression**
- **Disordered eating**
- **Breathing problems**
- **Sleep disturbances**

Pain is not a feature of PCOS

Diagnosis

A diagnosis of PCOS is usually made if a woman meets at least 2 of the following 3 criteria (the Rotterdam criteria):

- **Irregular or infrequent periods (anovulation)**
- **Clinical and/or biochemical signs of high levels of androgens**
- **Polycystic ovaries on ultrasound scan - little fluid filled sacs around the follicles**

*Insulin resistance is a common feature

People with PCOS often have **insulin resistance**, and as many as **8 out of 10 women are overweight or obese**. As a result, *the body does not respond as normal to insulin*, therefore the level of glucose is higher. This in turn causes *further secretion of insulin*, which leads to *weight gain and higher levels of testosterone production.* **It worsens the symptoms of PCOS**, such as *menstrual irregularities* and *fertility issues*, as well as the symptoms of *androgen excess.*

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Why treat PCOS?

Long term implications of PCOS include chronic metabolic problems *such as* diabetes, hypertension, hyperlipidaemia, sleep apnoea, endometrial cancer *(if a woman has less than 3-4 cycles/year)*, mood disorders like depression, eating disorders and body image issues.

Lifestyle management is recommended as the **first line of treatment,** as it can help *reduce the insulin resistance* and ***restore the hormonal imbalance.***

This can then reduce the future impact of the chronic diseases and mental disorders mentioned earlier.

Lifestyle strategies

Maintaining a healthy weight helps reduce several of the long term effects of PCOS. Evidence suggests that l**osing as little as 5%** of body weight has a significant role in ***reducing* insulin resistance** and *testosterone levels,* as well as ***improving*** *body composition* and *cardiovascular risk markers.*

Regular exercise of different variety: **yoga, Pilates, swimming, cycling, aerobic exercises**. There is evidence that **high intensity interval *training*** and **weight resistance training *improve*** the metabolic dysfunction related to PCOS. **Aim for 150 minutes of exercise per week**, however, ***even small amounts are better than nothing.***

Use of ceramic tableware and avoidance of plastic. Plastic tableware usage has been associated with *ovulatory dysfunction* in PCOS, due to the bisphenol A (BPA) component of plastic containers. BPA has a positive association with endocrine disturbances in PCOS, as it *may contribute* to obesity.

Morning sunlight exposure. It helps to ***regulate*** the production of melatonin, our sleep hormone, and also ***reset*** cortisol levels, our stress hormone. Women with PCOS have lower levels of melatonin.

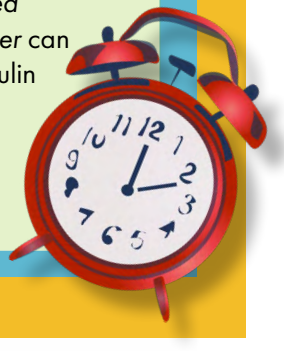
Look after mental wellbeing by having a support network. *Mindfulness, meditation, reading,* having a *routine* and *spending time with loved ones* can be helpful.

A good sleep routine. *7-9 hours of sleep every night.* ***Maintaining*** *a consistent circadian rhythm* is essential for hormone health.

Avoid smoking and excess alcohol. Smoking is associated with ***increased*** *free testosterone* and *fasting insulin levels* in women with PCOS. *Alcohol* ***affects*** *blood sugar levels.*

Stay hydrated and drink at least 1.5-2 litres of water every day. *Reduce* the intake of *fizzy drinks* and *caffeine.* ***Green tea*** may ***improve*** insulin sensitivity. ***Spearmint tea*** has an anti-androgenic effect and may lower testosterone levels.

Timing of food - evidence suggests that having a *full breakfast* with *reduced calorie intake at dinner* can help ***improve*** the insulin resistance associated with PCOS.



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Dietary strategies

Blood sugar control

A balanced, fibre rich whole food plant based diet, which includes a ***variety*** **of beans, legumes, vegetables, fruits, herbs, spices and wholegrains may help *control* blood sugar levels.**
It also *supports* the **gut microbiome,** which in turn ***reduces inflammation*** and ***oxidative stress.***


Vegetables


Fruits


Herbs and spices


Beans

Wholegrains

carbohydrates

Slow release


Leafy greens


Nuts and seeds

Avoid high-glycaemic index foods that **affects** blood sugar balance (e.g. *oats porridge* instead of cornflakes).

Focus on slow-release carbohydrates: *oats, quinoa, millet, buckwheat, beans and pulses, black or brown rice, sweet potato.* Focus on whole grains. These complex carbohydrates contain *fibre,* which causes blood sugar to *rise more slowly.*

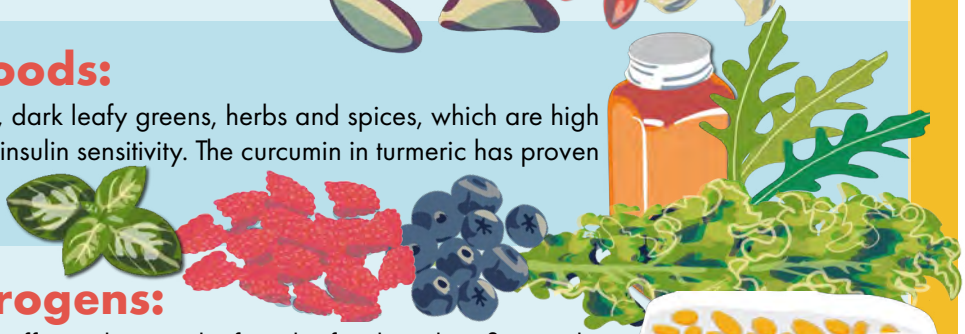
A whole food plant based diet also provides good sources of magnesium (e.g. *leafy greens, nuts & seeds*). Current research indicates an association between adequate *magnesium* status and *improved* insulin resistance.

Plant-based proteins:

Eating protein stimulates the body to produce insulin, so consume fibre-rich plant-based protein sources (e.g. legumes, nuts).

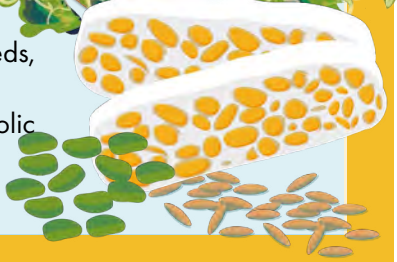
Anti-inflammatory foods:

A regular intake in foods such as berries, dark leafy greens, herbs and spices, which are high in antioxidants. Cinnamon may increase insulin sensitivity. The curcumin in turmeric has proven anti-inflammatory properties.



Benefits of phytoestrogens:

Phytoestrogens appear to have protective effects. They can be found in foods such as flaxseeds, soy products, chickpeas, sesame seeds.
Limited research shows that soy may have a beneficial effect on PCOS by improving metabolic aspects of the condition. Food sources include edamame beans, tofu, tempeh.



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Dietary strategies

Myo-inositol:

Many plant foods contain inositol, a *B vitamin-like compound* that has been shown to **support** women with PCOS. It helps **increase** *insulin sensitivity* and **limit** *menstrual disturbances.* Food sources include *whole grains, legumes, citrus fruits, almonds.*

You may wish to discuss supplementation with your healthcare provider.

Choline:

Choline is a nutrient similar to the B vitamins. A **deficiency** in choline is associated with *non-alcoholic fatty liver disease (NAFLD)* and *pre-eclampsia*, conditions highly prevalent in women with PCOS.

The richest plant sources of choline include *cruciferous vegetables, legumes, some nuts such as peanuts, soy (a very rich source), edamame and sunflower seeds.*

Advanced glycation end products (AGEs)

AGEs are proteins or fats that become glycated as a result of exposure to sugars. The formation of AGEs is a part of normal metabolism, and **they accumulate as we age.** However, food, especially when cooked with **dry heat,** can also be a source. AGEs act as **toxins** and attach to **receptors** in the body, causing *oxidative stress, cellular damage,* and *inflammation,* which then ***promote*** early ovarian ageing. Women with PCOS have been found to have **higher levels** of circulating AGEs. Diets **low** in AGEs, e.g. a *whole food plant-based diet,* will ***reduce*** these stressors in the body.

Foods **high** in AGEs, such as *processed* and *fried foods, beef, pork, poultry, cheese* and *butter,* are ***best avoided***.

It is best to **avoid high temperature dry cooking**, and instead ***use steaming and stewing***. *Roasted nuts* have ***more AGEs*** than their *raw version.*

Vitamin D:

Vitamin D deficiency is common in women with PCOS. ***Vitamin D is important for endocrine health.*** It **increases** *insulin sensitivity.*

Resources

https://www.verity-pcos.org.uk(support group)

*https://www.nhs.uk/live-well/healthy-weight/bmi-calculator

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Medical Management and further details can be found on: https://www.rcog.org.uk/en/patients/patient-leaflets/polycystic-ovary-syndrome-pcos-what-it-means-for-your-long-term-health

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