Diet And Lifestyle Advice For
Polyendocrine Metabolic Ovarian Syndrome (PMOS)

PLANT-BASED Health Professionals UK
Promoting Sustainable Health and Nutrition

Formerly known as Polycystic Ovary Syndrome (PCOS)

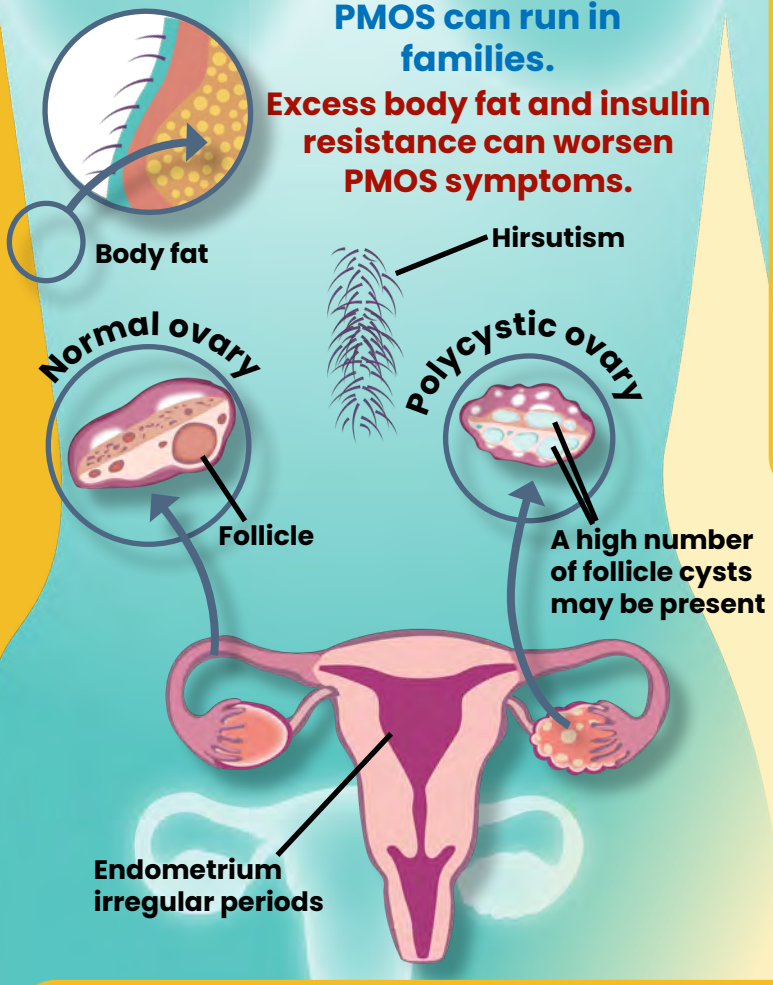
What is PMOS?

It is an endocrine and metabolic condition affecting multiple parts of the body, including reproductive and cardiometabolic health. It impacts women of reproductive age, from teenage years to menopause and beyond.(1)

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.

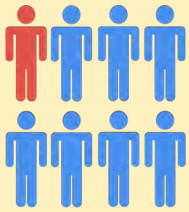
PMOS can run in families.

Excess body fat and insulin resistance can worsen PMOS symptoms.



PMOS affects about 1 in every 8 women.

Up to 70% of affected women remain undiagnosed.(2)



Common symptoms(3)

Women may experience some or all of the following symptoms:

- **Irregular** or **absent periods** due to less frequent ovulation
- **Signs of excess androgens** - increased facial or body hair, acne, hair loss on the scalp
- **Weight gain**
- **Insulin resistance***
- **Fertility problems** -Most women will be able to get pregnant either by themselves or with appropriate support
- **Mental health issues,** including anxiety and depression
- **Disordered eating**
- **Sleep disturbances**
- **Low-grade inflammation**

Diagnosis

A diagnosis of PMOS is usually made if a woman meets at least **2 of the following 3 criteria.**(4,5)

- **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 - or elevated anti-Müllerian hormone (AMH).**

Adolescents (age 10-19 years) require the presence of the first two criteria.

*Insulin resistance is a common feature

People with PMOS often have **insulin resistance**, and as many as **8 out of 10 women with the condition are overweight or obese**. This means the body **does not respond as normal to insulin**, resulting in **higher glucose levels**. This in turn causes **further secretion of insulin**, which leads to **weight gain** and **higher levels of androgen production. PMOS can affect women of all body sizes. Lean PMOS affects around 20% of women.**

It worsens the symptoms of PMOS, such as menstrual irregularities and fertility issues, as well as the symptoms of androgen excess.

Pain is not a core feature of PMOS, but can co-exist alongside other conditions such as endometriosis, adenomyosis, fibroids, which can cause pain.

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Why treat PMOS?

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

Lifestyle management is recommended as **first-line treatment,** as it can help reduce insulin resistance and restore metabolic health. This can **reduce the future risk** of chronic conditions and mental health disorders.(6,7)

Lifestyle Strategies for PMOS

Maintaining a healthy weight
helps **reduce** several of the long-term effects of PMOS. **Losing 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 factors**.

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

Limit exposure to and avoid plastics wherever possible.
Emerging evidence suggests that **exposure** to certain **compounds in plastic**, including **bisphenol A (BPA)**, can **disrupt endocrine function, hormone health** and may **contribute** to **weight gain**. If possible, **limit exposure** by **avoiding use of plastic containers, utensils and tableware**.

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

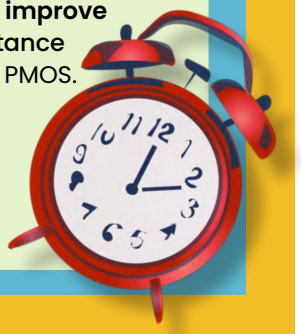
Look after mental wellbeing by having a support network.
Mindfulness, meditation, reading, having a routine and **spending time with loved ones** can be helpful.

A good sleep routine.
7-9 hours of sleep every night. **Maintaining** a **regular sleep routine** in keeping with the **body's natural circadian rhythm** is **essential** for supporting **hormonal** and **metabolic health.**

Avoid smoking and alcohol.
Smoking is associated with **increased free testosterone** and **fasting insulin levels** in women with PMOS. **Alcohol negatively impacts** many aspects of **physical** and **mental health**, including **glucose regulation** and **hormonal health.**

Stay hydrated and drink at least 1.5-2 litres of water every day.
Reduce the intake of **sugar-sweetened drinks**. **Green tea** may **improve insulin sensitivity**. **Spearmint tea** has an **anti-androgenic effect** and may **lower testosterone levels**.(8)

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



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Dietary strategies

Blood sugar control

A balanced, fibre-rich **whole-food plant-based diet,** which includes a ***variety*** of *legumes, nuts, fruit, vegetables, herbs, spices* and *whole grains* helps to **maintain** a **healthy body weight, maintains insulin sensitivity** and **supports blood sugar control.**
It also supports the **gut microbiome,** which in turn **reduces inflammation** and **oxidative stress.**

Focus on slow-release carbohydrates (low GI foods): *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.**

Avoid high glycaemic foods (high GI foods) that affects **blood sugar balance e.g.** *refined grains and free sugars.*

Eating regularly helps keep blood sugar levels stable, reducing insulin resistance.

A whole-food plant-based diet also provides good sources of **magnesium** (e.g. *leafy greens, nuts & seeds*). **Adequate magnesium status can improve insulin resistance.**

Prioritise plant-sources of protein:

Fibre-rich, plant-based protein sources (e.g. *beans, pulses, soya, nuts*) support **blood sugar control** and **satiety. Soya** has also been shown to help **restorate ovulation** in people with PMOS.

Anti-inflammatory foods:

A regular intake of foods such as *berries, dark leafy greens, herbs and spices*, which are **high in antioxidants**. *Cinnamon* may increase insulin sensitivity.(9) *Curcumin* in *turmeric* has proven anti-inflammatory properties.(10)

Benefits of phytoestrogens:

Phytoestrogens appear to have **protective effects**. They can be found in foods such as *flaxseeds, soya products, chickpeas, sesame seeds*.
Limited research shows that *soya* may have a **beneficial effect on PMOS** by **improving** cardiovascular and metabolic health. Food sources include *edamame beans, tofu*, and *soya drinks*.(11)

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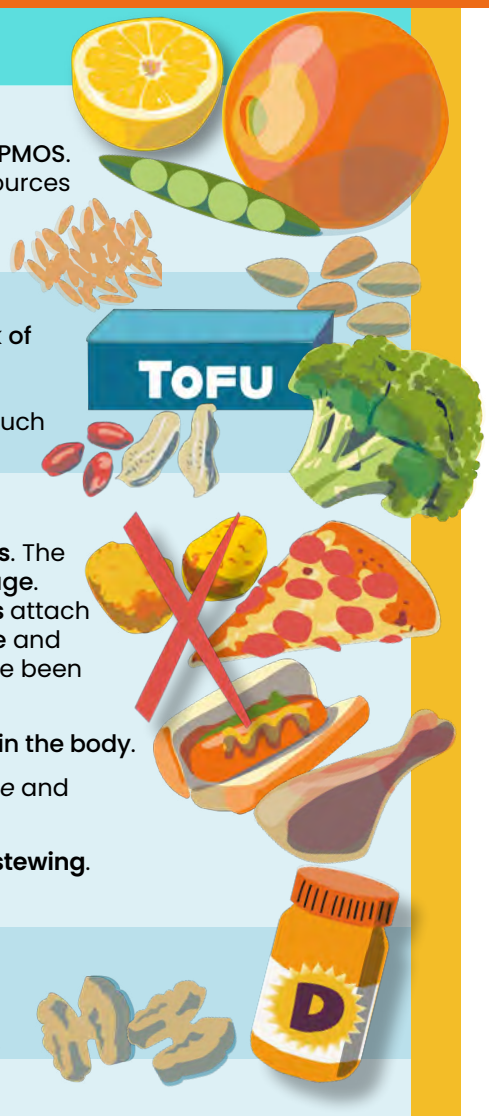

Myo-inositol:

Many plant foods contain inositol, a compound shown to **benefit women with PMOS**. 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.(12,13)

Choline:

Choline is an **essential nutrient**. A **low intake** is associated with an **increased risk of metabolic dysfunction-associated steatotic liver disease (MASLD)** and pre-eclampsia in pregnancy, conditions highly prevalent in women with PMOS.
The **richest plant sources** include *cruciferous vegetables, legumes*, some *nuts* such as *peanuts, soya foods*, 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** attach to **receptors in the body** and may contribute to **oxidative stress, cellular damage** and **inflammation**, which then promote **early ovarian ageing**. Women with PMOS have been found to have **higher levels of circulating AGEs**.(14)

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 PMOS. Vitamin D is important for **endocrine health. It increases insulin sensitivity.**

Omega-3 fats

Omega-3 fats are important to include in the diet. **Healthy plant-based sources** include, *flaxseeds, hemp seeds, walnuts, chia seeds*. If you do not eat fish, then **consider including** an *algae-based supplement of DHA/EPA*.

References

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7) BDA factsheet. https://www.bda.uk.com/resource/polycystic-ovary-syndrome-pcos-diet.html

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14) Ozdemir, M. et al. 2025. Available from https://doi.org/10.1007/s43032-025-01808-8

Further resources

https://www.verity-pcos.org.uk/

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Created: 03.06.26

Review date: 06.2029

Version no: FS-PMOS-2.0