

PCOS (Polycystic Ovarian Syndrome)

What is PCOS?

- PCOS is a condition where a woman doesn't ovulate because the body is producing excess androgens (male sex hormones like testosterone & DHEAs). Currently, there is no known cause of PCOS only associations with excess insulin, low-grade inflammation, & genetics.
- PCOS may be due to abnormalities in the metabolism of androgens & estrogen as well as the control of androgen production (testosterone & androstenedione - higher in males than females but present in both).
- In women one of the main purposes of androgens is to be converted into the female hormones called estrogens through a process known as aromatization.
- Androgens are a group of hormones that include testosterone, as well as DHEA-S & androstenedione - responsible for most PCOS symptoms, including infertility, acne, hirsutism (excess hair growth), & male pattern balding.
- PCOS is also linked to the development of other medical conditions, such as insulin resistance, type 2 diabetes, high cholesterol, high blood pressure, & heart disease if not managed correctly.

Potential Causes

Insulin resistance - through complex pathways elevated insulin levels lead to increased ovarian androgens (overproduction of testosterone), increased adrenal androgens (DHEA & testosterone male sex hormones), increased Triglycerides & decreased HDL (good cholesterol).

Ovarian Dysfunction - very low estradiol & very high ovarian androgens lead to elevated acyclic estrogen (estrone) which potentiates the development of numerous immature cyst follicles which in turns leads to increased LH (luteinizing hormone) & decreased FSH (follicle stimulating hormone).

Excess Weight Gain - an increase in fatty tissue can lead to the conversion of androgens to estrogen which increases the levels of non variable estrogen.

Adrenal Dysfunction - excessive adrenal production of androgens leads to elevated estrone, HPA dysfunction, & genetic predisposition can also play a role in getting PCOS.

Testing for PCOS

Primary tests that typically diagnose PCOS but could still be relevant to the stage at which PCOS is at:

- **Testosterone** – as people with pcos often produce excess androgens (male sex hormones) this will likely be elevated.
- **Sex hormone binding globulin (SHBG)** – this can be reduced in pcos
- **Anti-Mullerian hormone (AMH)** also known as MIF, MIS, or MIH) – this level may be increased due to the number of follicles present or as a tumour marker in some ovarian cancers which can lead to early detection and prevention.
- **Ovarian ultrasounds** may show a pearl of cysts around the ovaries
- **Serum Prolactin** may be raised

****When looking at a diagnosis PCOS would show to be a collection of symptoms resulting from abnormal HPO (hypothalamic-pituitary ovarian) axis function.****

Secondary tests to determine hormone levels & how to best approach balancing as needed:

- **Follicle stimulating hormone (FSH)** – will be normal or low with PCOS
- **Luteinizing hormone (LH)** – will be elevated
- **Estrogens** – may be normal or elevated
- **DHEAS** – may be elevated as it is a male sex hormone
- **Androstenedione** – may be elevated

Triggers - Poor diet, inflammation, insulin resistance linked to weight & poor diet, stress, compromised hormone function, & epigenetics to name a few.

Drivers - Poor diet would drive inflammation & insulin resistance. Poor nutritional choices would affect hormone balance & production. Stress would affect adrenal function & may disrupt hormone receptors & production as well.

****Triggers & drivers could be considered interchangeable & so by addressing either you could help the other****

Treatments

While there is no cure for PCOS & it does not go away on its own, there are options aimed at relieving & treating symptoms, while helping to prevent future complications. Your options depend on the type & severity of your symptoms & your desire to become pregnant. Speaking with a healthcare practitioner about what will work best for your specific needs is the best place to start.

Diet, exercise, & maintaining a healthy body weight are a few of the most important strategies for treating PCOS & may help manage symptoms. These lifestyle changes are recommended to help decrease insulin resistance. Regular exercise & healthy foods will help lower blood pressure & cholesterol. While refraining from smoking cigarettes or other tobacco products also may lower androgen levels.

Orthodox Treatments may include:

- Drugs such as metformin may be prescribed to treat insulin resistance & diabetes & may also help to regulate menstrual periods & encourage ovulation.
- Antibiotics or retinoic acids may be used to treat acne.
- Oral contraceptives may be prescribed to help normalize menstrual periods.
- Other medications may also be prescribed to: Stabilize hormone levels - Treat more severe acne and/or excess hair - Encourage or induce ovulation - Decrease the risk of endometrial cancer

Naturopathic treatment aims may include:

- Reducing weight especially around the middle to help combat the release of androgens
- Decrease insulin resistance by removing sugars & refined foods, increasing protein & veggies to improve metabolism, promote weight management & improve hormone profiles
- Vitamin D & Calcium when taken in combination can help to balance hormones & symptoms associated with PCOS. Vitamin D helps to lower AMH & increases receptors for AGEs, while helping the body to absorb Calcium, essential for bones, teeth, nervous system function & muscle contractions. ****AGEs stands for advanced glycation end products that can be common with insulin resistance or diabetes, increasing the risk of atherosclerosis****
- Normalize [cortisol](#) levels to help manage insulin levels since overproduction of cortisol in the long term leads to increased glucose levels & weight gain.
- Promote liver & gut detoxification of estrogens & toxins by increasing fibre intake through diet. Increasing foods in the brassica family along with [raw carrots](#) can be beneficial here. Brassica include the likes of: kale, cabbage, collar, broccoli, sprouts, cauliflower & turnip ****Consume in moderation if thyroid issues are present****
- Increase levels of Inositol (type of B vitamin) through fruits, grains & nuts which may also improve insulin resistance & promote ovulation
- Increase [Omega 3s](#) to help reduce hepatic (liver) fat & improve liver function which helps us to detox naturally & synthesis many proteins & hormones, regulate cholesterol & glucose production along with many many more critical functions that promote good health

In summary the take aways for managing PCOS are as follows:

1. Keep a healthy weight to manage insulin levels which can negatively impact you if elevated - leading to insulin resistance & type 2 diabetes. Do this by eating whole foods (lean meats like chicken, salmon or

other fish, lots of veggies, fruits like berries, kiwis, grapes, apples, oranges & even bananas (the greener the better) nuts, seeds, whole grains in moderation, include dairy in moderation & in the form of kefir, probiotic yogurts, aged or organic cheeses, limit sugar, starchy & processed foods, along with a substantial reduction in alcohol.

2. Ensure you are getting adequate vitamin D & Calcium intake - Vitamin D 1000 IUs daily through supplementation & Calcium 1000 mg daily which can be got through diet (green leafy veg & dairy)
3. Reduce stress to help balance cortisol levels (see link above)
4. Increase protein in your diet to help manage weight by helping you feel fuller, reduce cravings & balance blood sugars.
5. Include fermented foods to aid in weight management & promote good gut bacteria which can also help to stabilize moods & promote healthy digestion, beneficial for excreting excess estrogen & toxins. Organic or probiotic yogurts, kefir, sauerkraut, pickled ginger, & kombucha are all good options.
6. Increasing Omega-3s to help reduce inflammation which links to obesity, stress & other health problems. Found in fatty fish like salmon, mackerel, sardines, herring, walnuts, avocados, flax & chia seeds, as well as grass fed meats & dairy (50% more omega's are available from organic grass fed meat & dairy according to recent [research](#)).
7. Include some form of cardio 3x weekly for 45 minutes OR weight training for the same duration. Weight lifting has been shown to reduce testosterone levels when adhered to for the mentioned duration.
8. Reduce caffeine intake & increase [Green Tea](#) to help with hormone balance & insulin resistance. Aim for no more than 2 cups of caffeine a day & the same with Green Tea, even while the benefits of this tea are substantial (*it contains flavonoids which may interfere with thyroid health if you have issues*)
9. Ensure you are getting quality sleep as this can often matter more than quantity. Tips to help improve sleep include: not eating within 2 hours of bed, switching off from electronics 1 hour prior to bed, doing gentle stretches or yoga prior to bed, journaling to clear the mind, meditation, lavender, breathing exercises. For more information on the benefits of sleep & health click [here](#).

Supplements that may also help to manage symptoms include:

- **Inositol** (myo-inositol) which is a form of B vitamin that may help improve insulin sensitivity - 4 g daily
- **Maca Root** to help balance hormones & reduce cortisol levels (can be had in teas, powder or capsules). It naturally helps to increase libido, energy, & can help with memory function in some people. **Not to be taken if you have thyroid issues as it contains goitrogens & will interfere with thyroid function, check with you healthcare practitioner first**
- **Ashwagandha** can help to reduce stress & anxiety while naturally balancing cortisol levels over time.
- **Holy Basil** works on chemical & metabolic stressors by reducing blood sugar levels, cortisol, & can aid in the prevention of weight gain.

Spices can add flavour & health benefits so try to include more like:

- **Cinnamon** (insulin regulation)
- **Turmeric** (insulin regulation & anti-inflammatory)
- **Zinc** (great for immune support & function)
- **Vitamin D** (hormone balance & immune health)



Happy Out Nutrition

Where Happy In Leads to Happy Out!

Website: www.happyoutnutrition.com

Email: info@happyoutnutrition.com

Phone: 087 440 5199