

Overview

Polycystic ovary syndrome (PCOS) is a hormonal imbalance condition that affects at least 1 in 10 women of reproductive age. Some researchers estimate up to 21% of women suffer from PCOS, but many remain undiagnosed. It is not a disease, but rather a cluster of symptoms that result due to high insulin. Contrary to belief, it is not an ovarian issue. Enlarged ovaries and problems with ovulation are a symptom only.

The word “polycystic” means multiple cysts. PCOS was named due to the common appearance of multiple follicles in the ovaries seen on a pelvic ultrasound. PCOS is a poorly named condition as the “cysts” which were noticed on ultrasounds are in fact not cysts at all but multiple under-developed follicles.

Signs & Symptoms of PCOS

PCOS is not a disease, but a cluster of symptoms that result due to problems with high insulin, ovulation and high levels of androgens. This means that not every woman with PCOS will have every symptom of PCOS. It is possible to only have a small handful of symptoms, or to relate to every one of the symptoms below. It is also possible for certain symptoms to come and go over time and in response to changes you are making to manage your PCOS and your advancing age.

The symptoms listed below are by no means an exhaustive list, but some of the most common signs and symptoms, including ‘hidden’ symptoms such as those seen on ultrasound or blood tests.

The hallmark symptoms of PCOS are irregular periods, acne, excessive facial and body hair and hair loss on your head. But you might be experiencing any of the following:

- Irregular periods or cycles that are consistently longer than 35 days.
- Anovulation (not ovulating).
- Multiple follicles on your ovaries on ultrasound.

NOTE: This is not required to be diagnosed with PCOS

These large numbers of follicles occur in PCOS due to problems with ovulation, causing the follicles (which house the growing eggs waiting to be released at ovulation) becoming ‘stalled’ in their development. In a normal cycle, up to 12 follicles begin developing at one time, with one of these follicles becoming the ‘dominant’ follicle and rupturing to release an egg ready to be fertilized at ovulation.

In PCOS, it is common to struggle to ovulate on time because the follicles fail to make it to the final stage of development where they can release an egg. Not all women with PCOS have polycystic ovaries on ultrasound. Actually, polycystic ovaries are not a requirement for diagnosis.

- Acne: especially around the chin and jaw-line, chest and upper back.
- Unwanted hair growth (e.g. hair growing on your chin, upper lip, chest or around your nipples).
- Hair loss or thinning hair on your head.
- Insulin resistance and/or blood sugar issues.
- Anxiety, depression, mood swings, fatigue, low libido, cravings.
- Weight gain (especially your stomach) and difficulty losing weight.
- Blood tests show high insulin or high HgA1c.
- Blood tests show high luteinizing hormone (LH) to follicle stimulating hormone (FSH) ratio.
- Blood tests show excess androgens like testosterone or DHEAS.

Having PCOS now doesn't mean you will suffer from this condition for the rest of your life, although you may be at a higher risk of developing other metabolic conditions later in life.

How do you diagnose PCOS?

There is no singular definitive test to determine if you have PCOS or not. This is because PCOS is not a disease but a group of symptoms driven by problems with high insulin, ovulation and excess androgen production.

There are several PCOS diagnostic criteria used by health professionals, but the most common is the Rotterdam Criteria.

Based on the Rotterdam criteria, to be diagnosed with PCOS you must meet at least two of the following three:

1.) **Oligo-ovulation or anovulation:** longer than 35 days between the start of one period

bleed and the next or not ovulating at all.

- 2.) **Clinical and/or biochemical hyperandrogenism:** (male hormones like testosterone and DHEAS) clinical presentation appears as acne, hair loss on your head and dark hair growth on your face or body. Biochemical hyperandrogenism is abnormal levels on your lab results.
- 3.) **Polycystic ovaries:** Your ovaries might be bigger. Many follicles containing immature eggs may develop around the edge of the ovary. The ovaries might not work the way they should. This can be seen on an ultrasound.

The Root Cause of PCOS

High insulin or insulin resistance!!!

Insulin resistance is a hormonal condition which can cause weight gain (particularly around your middle), heart disease, and if left uncontrolled, eventually type 2 diabetes. In women who are genetically susceptible to PCOS, excess insulin also causes your body to produce too many androgens (male hormones like testosterone). Insulin resistance is estimated to be the driver in around most cases of PCOS.

In PCOS, having too much insulin causes your ovaries to start producing testosterone instead of estrogen, which triggers the symptoms of acne and hair changes. Insulin also causes your brain to create more luteinizing hormone (LH) which causes delayed or halted ovulation (hence late or missing periods).

Insulin resistance most commonly occurs because the cells in your body get 'tired' of dealing with excess blood sugar levels (from eating too much sugar or refined carbohydrates like bread, pasta, baked goods). However, insulin resistance can also occur because of smoking, drinking alcohol, having imbalanced gut bacteria and due to environmental toxins, so it's possible to develop insulin resistance even if you eat a balanced diet.

The most common physical sign that you have insulin-resistance is weight gain around your middle section.

Important note: you do not have to be overweight to experience insulin resistance. It is also possible to have 'lean' PCOS (where you are not suffering from excess weight), but still experience insulin resistance.

How is PCOS treated?

PCOS treatment has 3 targeted approaches:

1.) **Diet**

2.) **Exercise**

3.) **Supplements / Medications**

At least 70% of women with PCOS suffer from insulin resistance, which means that cutting out sugar and reducing carbohydrates is a key strategy in improving PCOS symptoms. By far the biggest contributor to insulin resistance is eating too much

sugar, sweet drinks and dessert foods. If you have insulin resistance, your body doesn't handle large spikes in your blood sugar levels the same way someone without insulin resistance does.

This means that every time you consume a sugary treat, your body becomes more and more insulin resistant. Becoming more insulin resistant means further weight gain, worsened acne and hair problems, and reduced fertility.

The first step is to cut sugar out of your diet until

your insulin response goes back to normal. This means cutting out soft drinks (soda), cakes, pastries, candy, chocolates, sweetened yogurt, ice-cream, muffins, cereal, fruit juice and date balls, as well as added sugar (for example in your tea and coffee or on your cereal).

Whole fruit can still be enjoyed in small amounts (maximum 1-2 servings per day), but should be paired with a healthy protein or fat source. When you eat a piece of fruit on its own, your body very quickly breaks down the sugars in the fruit and rapidly increases your blood sugar levels. Enjoying your fruit with a source of fat and/or protein helps to reduce the surge in blood sugar by slowing down your digestion of the meal. This means that your body doesn't need to secrete as much insulin to

bring your blood glucose levels back down.

Tips for balancing your blood sugar:

- Eat within an hour of waking
- Make sure every meal contains a protein and healthy fat
- When eating carbs, use slow-release options such as sweet potato, squash, brown rice or quinoa
- Eat every 4-6 hours
- Add cinnamon to your food
- Pack blood-sugar balancing snacks such as boiled-egg, nuts and dark chocolate.

Creating a PCOS-Friendly Meal

As a rough guide when putting together a plate, aim for half of your plate to be low-starch veggies, $\frac{1}{4}$ protein, $\frac{1}{4}$ or less a small portion of slow-release carbohydrates and the remaining $\frac{1}{4}$ healthy fats. Some examples to get you inspired include:

Slow Release Carbohydrates:

- Sweet potato
- Pumpkin/squash
- Beetroot
- Parsnip
- Brown rice
- Whole oats
- Quinoa
- Buckwheat

Hormone-Friendly Fats:

- Olive oil
- Avocado
- Coconut products (e.g. coconut oil, cream, desiccated)
- Skin-on organic/free-range meats and seafood
- Nuts and seeds
- Grass-fed butter or ghee

Hormone-Friendly Protein:

- Organic/grass-fed meats (e.g. lamb, chicken, beef)
- Beans, lentils and legumes (e.g. chickpeas, kidney beans)
- Brown rice, pea or hemp protein powders
- Organic, fermented soy products (e.g. tempeh)
- Free-range eggs
- Nuts and seeds
- Fish and seafood

Low-Starch Vegetables:

- Zucchini
- Cauliflower
- Broccoli
- Spinach and other salad greens
- Kale
- Cucumber
- Green beans
- Brussel's sprouts
- Eggplant
- Mushroom
- Onion + garlic

PCOS-Friendly Food Swaps

Cutting down on refined carbohydrates you may be used to eating regularly (like bread, pasta, quick oats, cakes, pastries and biscuits) is tough. One of the most successful ways you can reduce these in your diet is to find enjoyable alternatives so that you don't feel like you're missing out. Feelings of deprivation often lead us to binge on 'forbidden' foods, so explore some of the PCOS-friendly swaps below to fill the void.

Bean-Based Pastas

Bean-based pastas (like chickpea or lentil pasta) are a great swap from regular pasta because they still contain complex carbohydrates and also protein from the legumes. This means the carbohydrate is released slowly into your bloodstream, preventing a rapid spike in blood glucose level.

Vegetable Rices, Noodles And Wraps

Cauliflower rice, zucchini noodles and lettuce leaf wraps are good choices to replace fast-release carbs like bread, noodles and wraps and have the added benefit of sneaking in an extra serve of veggies into your meal. These can be made at home, or often purchased pre-spiralized or riced for convenience.

10 Foods For PCOS

These 10 foods for PCOS are a great place to start. We recommend you aim for at least one of these daily.

- 1.) **Avocado:** high in healthy fats which provide the building blocks for your hormones and help to keep blood sugar stable.
- 2.) **Almonds:** a great PCOS-friendly snack as they contain a nice balance of protein and fat which will keep your blood sugar stable and top up energy levels until your next meal.
- 3.) **Cauliflower:** contains a compound that supports liver detoxification of estrogen. Whilst testosterone is the most common hormone imbalance in PCOS, excess testosterone is converted to estrogen meaning many women with PCOS also suffer from excess estrogen issues.
- 4.) **Dark chocolate:** when higher than 85% cacao, dark chocolate is very low in sugar and is a perfect sugary treat replacement. Cacao is also a rich source of magnesium which improves insulin sensitivity.
- 5.) **Broccoli:** contains the same compound as cauliflower.
- 6.) **Eggs:** a perfect balance of healthy fats and protein to support stable blood sugar. Ideal as a snack or added to meals.
- 7.) **Leafy greens:** support your liver to effectively breakdown and clear hormones.
- 8.) **Pumpkin seeds:** contain a compound which reduces excess the testosterone production that is responsible for acne and hair changes in PCOS.
- 9.) **Sweet potato:** a slow-release carbohydrate that causes less impact on blood sugar levels than refined carbohydrates.
- 10.) **Cinnamon:** slows gastric emptying (keeping you fuller for longer) and improves blood sugar levels.

Supplements For PCOS

- 1.) **Magnesium glycinate.** Magnesium is a 'natural metformin' due to its powerful ability to reduce insulin resistance similar to the leading diabetic drug Metformin. I recommend Magnesium glycinate 500-1000mg daily taken at nighttime.
- 2.) **Inositol.** Inositol helps to improve insulin resistance and decrease your high levels of androgens. I recommend D-Chiro-Inositol which can be purchased here: chiralbalance.com/d-chiro-inositol/
- 3.) **Saw Palmetto + Milk Thistle.** A two-part botanical formula to support healthy hormonal regulation and liver health. It can be purchased here: chiralbalance.com/saw-palmetto-milk-thistle/
- 4.) **Probiotics.** Supports balanced gut flora.
- 5.) **Zinc.** Improves ovarian function thereby decreasing androgens and increasing progesterone, which is a natural androgen blocker. Zinc can help the unwanted symptoms of acne or hair growth, but it could take 8-12 weeks to see results. I recommend taking Zinc 30 - 50mg after a meal (do not take on an empty stomach or it will cause nausea).

Medications For PCOS

Alternatively, your Doctor may choose to start you on a more traditional medication regimen including:

- 1.) **Birth control pill.** Birth control pills work by shutting down ovulation and your natural hormone production. Because of this, it can suppress some of the common annoying symptoms of PCOS like acne and hair growth.
- 2.) **Metformin.** Reduces insulin resistance.
- 3.) **Progesterone.** Decreases androgen production and protects against the development of an abnormal or pre-cancerous uterine lining.
- 4.) **Spironolactone.** An anti-androgen that helps decrease unwanted hair growth.

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