

Polycystic Ovary Syndrome (PCOS):

General Information, Evaluation, and Treatment

Polycystic ovary syndrome (PCOS) is a condition that can cause irregular periods, difficulty losing weight, and symptoms of extra androgenic sex hormones (e.g. testosterone) including acne, extra facial or body hair, and hair loss from the head. The condition can also make it more difficult to get pregnant. **PCOS is a common condition that affects up to 5-8% of women in Canada.**

Symptoms of PCOS

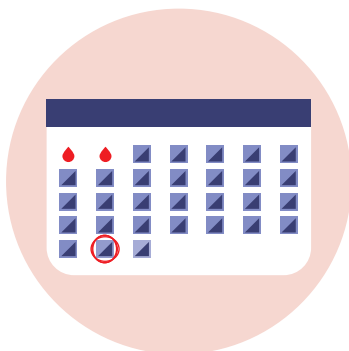
Symptoms of PCOS can vary between people, but some of these symptoms may include:

- **Menstrual Irregularities** – Having fewer than 8 periods a year (oligomenorrhea or amenorrhea).
- **Hyperandrogenism** – Excess male hormones (e.g. testosterone) can present in a variety of ways. This may include (i) acne, (ii) growing thick, dark hair on the upper lip, chin, sideburn area, chest, or abdomen, and (iii) hair loss from the head.
- **Fertility Concerns** – Difficulty getting pregnant without medication to assist with ovulation (e.g. ovulation induction agents *Clomid* or *Letrozole*).
- **Weight Gain and Obesity**



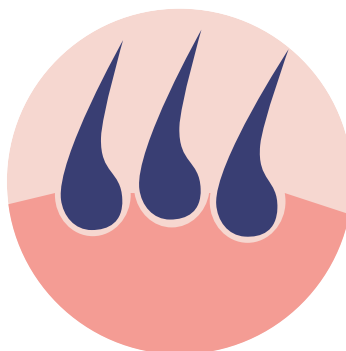
Diagnosis of PCOS

A diagnosis of PCOS can be made when **at least 2** of the following 3 criteria are met. **Not all three criteria are required for the diagnosis of PCOS.**



Menstrual Irregularities

Irregular periods (periods that happen more than 35 days apart) or no periods (amenorrhea)



Hyperandrogenism

Higher levels of androgens as shown in the blood (testosterone or DHEAS) or through symptoms such as excess hair growth, scalp hair loss or acne



Polycystic Ovaries

Imaging suggestive of polycystic ovaries (i.e. multiple ovarian cysts visible on ultrasound)

What can happen in Polycystic Ovary Syndrome?

Excess Androgens

The ovaries in PCOS produce too many androgens (the “male hormones”). Increased levels of these sex hormones in people with PCOS can lead to symptoms such as **acne and excess hair growth**.

Insulin Resistance

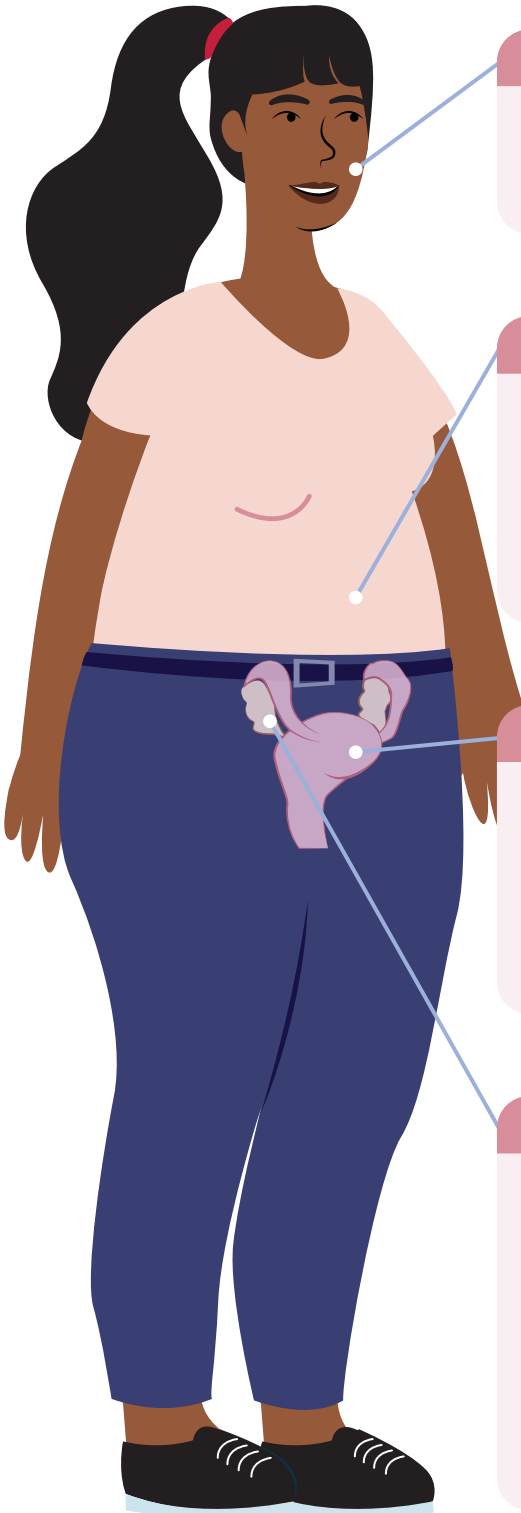
Some people with PCOS may have **elevated blood sugar due to resistance to insulin** (a hormone that normally lowers sugar levels). As the body tries to release more insulin to lower blood sugar, the high levels of insulin can act on the ovaries to facilitate production of male sex hormones, leading to symptoms of PCOS. High insulin and blood sugar levels can also result in health risks such as diabetes.

Thickening of Endometrial Lining

Because there is no consistent shedding, **the uterine lining can build up and get thicker**. Over time, this thicker uterine lining can lead to precancer or cancer cells in some patients. Your doctor may suggest treatments to keep the uterine lining thin (e.g. *Mirena IUD*, hormonal contraceptive pills) or a course of progesterone to help shed your lining through a progesterone withdrawal bleed.

Anovulation

In PCOS, reproductive hormones are unbalanced and, as a result, **the ovaries do not ovulate consistently**. Every month, an egg matures in the ovary in a structure called a follicle. Hormones help develop these follicles and eventually the follicle should ovulate, leading to release of the egg. In PCOS, follicles develop, however, they do not mature and ovulate consistently. This can lead to multiple small cysts within the ovaries. **Because there may be no monthly ovulation, periods may be inconsistent and oligomenorrhea can develop (fewer than 6-8 periods per year)**.



Treatment of PCOS

PCOS cannot be cured, however, **a variety of treatments are available to address the different symptoms and problems related to the condition.** Treatment should be individualized based on symptoms, other health concerns, and whether there are current plans for pregnancy.

Lifestyle Changes



Weight loss through diet and exercise in people with PCOS who are overweight improves insulin resistance, cholesterol and relieves symptoms such as excess hair growth. It can also have a positive effect on ovulation and fertility.

Combined Hormonal Contraception



Combined hormonal contraception (e.g. birth control pill) doesn't cure PCOS but can improve many of its symptoms including irregular periods, acne, and facial hair. This treatment also works to shed the lining of the uterus each month, thereby reducing your risk of precancer or cancer cells in the uterus.

Progesterone IUDs



Progesterone IUDs (e.g. *Mirena* or *Kyleena*) keep the lining of the uterus thin to decrease the chance of developing precancer or cancer cells inside the uterus.

Spironolactone



Spironolactone is used to treat symptoms of excess androgens (male hormones) such as acne, facial hair, excessive body hair.

Metformin



Metformin is used to help the body respond to insulin. In people with PCOS, it can help improve ovulation and decrease androgen levels.

Acne Treatment



Medicated skin lotion or antibiotics can be used as an adjunct to treat acne.

Hair Removal



Permanent methods of hair removal (e.g. laser therapy or electrolysis) can be used effectively to manage extra hair growth.

Long-term Health Risks of PCOS

PCOS can potentially increase your long-term risk of other health problems such as:

- Insulin resistance can lead to type 2 diabetes and cardiovascular disease
- Higher cholesterol levels and metabolic syndrome
- Sleep apnea (a sleep disorder that causes people to briefly stop breathing while they are asleep)
- Endometrial hyperplasia, which can increase the risk of endometrial cancer
- Depression

References

1. Singh S, Best C, Dunn S, Leyland N, Wolfman WL. No. 292-Abnormal uterine bleeding in pre-menopausal women. *Journal of Obstetrics and Gynaecology Canada*. 2018 May 1;40(5):e391-415.
2. Smithson DS, Vause TD, Cheung AP. No. 362-ovulation induction in polycystic ovary syndrome. *Journal of Obstetrics and Gynaecology Canada*. 2018 Jul 1;40(7):978-87.
3. Williams T, Mortada R, Porter S. Diagnosis and treatment of polycystic ovary syndrome. *American family physician*. 2016 Jul 15;94(2):106-13.

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