

What is PCOS?

Polycystic ovary syndrome (PCOS) is a hormonal condition in women that often manifests in adolescence. During the menstrual cycle of a healthy woman, one follicle, produced by the ovaries, will release an egg. In women with PCOS, the ovaries over-produce testosterone, yielding many smaller follicles. The immature follicles can accumulate in the ovaries and do not mature to release eggs.

The diagnosis of the condition in adolescents requires evidence of hyperandrogenism (high levels of androgen hormones in females) and abnormal menstrual patterns. In adults, four different phenotypes of PCOS have been identified:

1. **Classic PCOS** characterized by hyperandrogenism (high androgens), oligo-ovulation (irregular ovulation), and a polycystic ovary
2. **Hyperandrogenic PCOS** characterized by hyperandrogenism and irregular ovulation
3. **Ovulatory PCOS** characterized by hyperandrogenism and one or more polycystic ovaries
4. **Non-hyperandrogenic PCOS** characterized by irregular ovulation and one or more polycystic ovaries

Causes and risk factors

While the cause of PCOS remains unknown, several risk factors have been identified, including:

- Insulin resistance
- Obesity
- Heritable traits such as maternal PCOS
- Functional ovarian hyperandrogenism (FOH) as an adolescent

Signs, symptoms, and complications

- Hirsutism (male-pattern hair growth in women including growing extra facial hair or hair loss)
- Treatment-resistance acne
- Menstrual irregularity
- Acanthosis nigricans (skin discoloration in body folds and creases)
- Obesity
- Polycystic ovaries
- Pelvic pain
- Increased risk of insulin resistance, type 2 diabetes, cardiovascular disease and infertility

Diet and PCOS

Women with PCOS often struggle to maintain a healthy weight. Research shows that a low starch/low dairy diet may benefit overweight and obese women with PCOS, improving weight, insulin sensitivity, and testosterone levels.

Recommended dietary inclusions and exclusions:

Included foods	Excluded foods
Lean animal protein (poultry and meat) Fish and shellfish Eggs Non-starchy vegetables Low-sugar fruit (berries, apples, oranges, plums, etc.) Avocado Olives Nuts and seeds Olive and coconut oils Plant-based milk alternatives (unsweetened almond or coconut milk) Up to 1oz. of cheese per day For adults, up to 6oz. red wine per day	Grains Beans Other dairy products Sugar Fruit juice Raw turbinado sugar Evaporated cane juice High-fructose corn syrup Honey Agave nectar

Lifestyle and PCOS

Healthy lifestyle or behavioral strategies like goal-setting, self-monitoring, and utilizing social support can help women with PCOS achieve weight loss. Research has demonstrated several benefits from losing 5% of body mass, including increased ovulation frequency, increased chances of pregnancy, and improved hormonal balance.

The International Guideline for the Assessment and Management of PCOS provides recommendations for weight management:

- **Adolescents:** at least 60 minutes of moderate to vigorous physical activity per day, including muscle strengthening 3 days per week
- **Adults 18-64:** at least 150 minutes per week of moderate physical activity, or 75 minutes per week of vigorous activity, including muscle strengthening 2 days per week