

Understanding POLYCYSTIC OVARIAN SYNDROME (PCOS)

A Guide for Patients PCOS society of India

Introduction

Polycystic Ovary Syndrome, or PCOS, is a health condition that affects 12-15% of women in the reproductive age group (Approximately 10 million women). The prevalence is more amongst Asians than Caucasians. The exact cause is unknown, but it is considered a hormonal problem where the male hormones (Androgens) increase in the body leading to multiple problems.

Genetics and environmental factors are believed to be involved in the development of PCOS. Obesity plays a major role in increasing the severity of symptoms. Apart from being a leading cause of menstrual dysfunction and infertility it is responsible for symptoms that can affect the body both physically and emotionally. Hirsutism, Acne, Sleep disorders, loss of body image, depression are some of the common problems faced by adolescents. PCOS is also associated with diabetes, heart disease and uterine cancer in later life. **PCOS is being recognized as a major health issue since its ramifications stretch from adolescence to menopause.** Hence it is imperative that we learn to identify the symptoms.

The most effective treatment for preventing manifestations of PCOS and decreasing long term complications is life Style Management. Weight reduction, Exercise and Healthy diet are the cornerstone of management. It is easy to introduce these changes during early years of life. **Adolescence provides a perfect window for programming of metabolic dysfunction.**

What is PCOS?

It is a set of symptoms that occur due to an excess of male hormones (Androgens) in the ovary. This excess Androgen prevents proper growth of eggs in the ovaries. The arrested follicles (egg sacs) give a typical appearance on ultrasound. The name polycystic ovaries arises from this appearance of the ovaries though these are not cysts but 'follicles arrested in growth'.

What causes this problem?

The exact causative agent cannot be pin pointed but we know that genetic and environmental factors play an important role. There is often a hereditary link and a link with diabetes in the family. Obesity plays a key role in increasing the severity of symptoms.

PCOS and Insulin Resistance:

Insulin is a hormone that controls how the food you eat is changed into energy. Most women with PCOS have insulin resistance meaning that the body's cells do not respond to insulin in the normal manner. This occurs more in those girls who are overweight or obese, have unhealthy eating habits or have a sedentary lifestyle with not much of exercise and physical activity.

What are the symptoms?

1. **Irregular periods or menstrual cycle-** Women with PCOS may get delayed cycles, the bleeding may become less or they may start skipping the cycles for a couple of months or even more. This prolonged period of amenorrhoea (absence of menses) is generally followed by heavy and prolonged bleeding. The period disturbance is a sign that there is some problem with regular monthly ovulation. Sometimes there may be frequent and heavy cycles as well.

2. **Excess hair growth** may appear on the face, chin, upper lips, chest wall, around the nipples and abdomen. This is called hirsutism and occurs frequently in PCOS. The previously existing hair growth could become darker and coarser. *Fine hair over the body occurs during adolescence and does not indicate PCOS.* Hair that becomes increasingly thick and coarse with time would raise a suspicion of PCOS in the young.
3. Hair fall or hair thinning could occur. *Important to note that hairfall or thinning can be due to other reasons.*
4. Acne -on the face, chest, back. *Acne is a normal occurrence in adolescence.* However persistent deep acne may point towards PCOS.
5. Weight gain and trouble losing weight.
6. Darkening of the skin of the neck creases, underarms, groin areas.

How is PCOS diagnosed?

PCOS is an assortment of problems that are found together hence a physical examination, history, ultrasound and blood tests are required to diagnose PCOS and importantly exclude other causes of hirsutism. Symptoms may differ in different women. To be diagnosed with PCOS, a woman must have 2 of 3 diagnostic criteria: 1. Lack of ovulation (anovulation)- reflected by irregular menses.

2. Hyperandrogenism - signs of excessive male hormone in the body (hirsutism & acne) or increased testosterone (male hormone) levels in blood

3. Ovaries that have multiple fluid filled sacs or arrested follicles (polycystic appearance on ultrasound).

Women who have PCOS may complain of irregular periods. They may be overweight, have increased hair growth on the face and body, acne, or have problems with getting pregnant. On ultrasound enlarged ovaries with many small cysts may be seen. Blood tests may also show high blood sugar, high insulin levels and high cholesterol levels.

Does it affect pregnancy?

Women with PCOS have difficulty in ovulation and can have problem in conceiving. This is more common in those who are overweight.

Are there any long-term risks?

Metabolic syndrome (MS) is a risk that exists in adolescents and older women - in simple words it means that the body's metabolism is not working as it should and this can cause a whole lot of serious problems. Obesity increases the risk of developing MS.

Over a period of time particularly if left untreated there is an increased risk of developing Diabetes (Type 2), high blood pressure, cholesterol abnormalities, liver inflammation. Diabetes and high blood pressure can increase risk of heart disease. Cancer of the lining of the uterus is another important long term sequel. When ovulation is not happening properly the hormone cycle is disturbed and leads to an increased exposure of the uterine lining to estrogen. This makes the uterine lining thick, causes heavy irregular bleeding and when not adequately treated the lining undergoes pre-cancerous changes.

How to treat this?

Treatment is individualized depending on one's main concerns and problem areas. As a first basic step there has to be lifestyle modification with weight reduction, regular physical activities or exercise and eating the right way. Medicines may be required to regularise the cycles, control acne and hirsutism and to reduce insulin resistance. If one is trying to become pregnant and is not able to do on their own one might need to help with medicines to help ovulate and form a good egg. Long term follow up is needed to monitor for the risk of complications in later life. ***It is important to take medication under strict medical supervision.***

Lifestyle Management During PCOS

A healthy lifestyle is critical for managing PCOS. Since PCOS is a long term health risk it is important to inculcate healthy eating habits and regular physical activity into your schedule. In doing so you will prevent/delay the onset and severity of MS.

1.Set your goals: Goals must be specific, realistic and attainable. If you are overweight, then the initial goal of weight loss should be to reduce the bodyweight by 5- 10% from baseline.

2.Avoid crash diets: They are counterproductive. Crash diets lose more water and lean mass rather than fat.

3.Change eating habits:

1. Chewing food thoroughly and drinking water or green tea with your food will result in a longer period of satiety.
2. Drink 8-10 glasses of water every day to keep you hydrated and it will also help in flushing out the toxins from body.
3. Use smaller plates and serve your food from the kitchen, rather than at the table (this also has the added advantage of reducing the need for cleaning more dishes).
4. The Metabolic diet known to be helpful in PCOS believes that there should be a clear 5 hour gap between breakfast, lunch and dinner. Only water should be had in between meals. Protein should be a part of every meal. A different protein to be had at each meal and the first bite of the meal should be a protein as it activates insulin.
5. Use less of oil in your food by opting for methods like steaming. Sautéing and roasting etc.
6. Avoid junk food. Home-made food is the best food.
7. Include foods with high fibre content such as whole cereals like oats instead of refined ones like noodles or pasta.
8. Add more of green leafy vegetables in your diet.

Dietary modifications in PCOS

WhatToEat

High fibre foods can help maintain blood sugar levels and lower cholesterol. Fibre makes you feel full, so you tend to eat less. This helps with weight control. Aim for 21 to 25 grams per day. This may be beneficial to women with PCOS. Great options for high-fiber foods include:

- Fruit - especially berries, pears, oranges, figs, kiwi, cherries
- Vegetables - especially peas, spinach, squash and broccoli
- Whole grains - such as oats, brown rice, whole wheat, quinoa, barley and buckwheat
- Legumes - such as lentils, chickpeas, soybeans and kidney beans
- Cereals made with wheat bran, psyllium or whole grain oats
- Nuts and seeds - such as almonds, flax, sunflower seeds

Protein helps you feel full for longer so you eat less and can control your weight. Make sure to have some protein at every meal. Lean protein sources like tofu, chicken, and fish are very filling and a healthy dietary option for women with PCOS.

Non -Vegetarian: Chicken, fish, turkey.

Vegetarian options: legumes, soy or a quarter cup of nuts or seeds. Milk and low fat yogurt are also good sources of protein.

What Not To Eat

Refined carbohydrates cause inflammation, exacerbate insulin resistance, and should be avoided.

Sugar is a carbohydrate and should be avoided wherever possible. When reading food labels, be sure to look for sugar's various names. These include sucrose, high fructose corn syrup, and dextrose. Sugar things you drink, such as soda and juice.

Inflammation-causing foods, such as french fries, margarine, and red or processed meats should be avoided. Foods that help reduce inflammation may also be beneficial. They include: tomatoes, spinach, almonds and walnuts, olive oil, avocado, fruits, such as blueberries and strawberries, fish high in omega-3 fatty acids, such as salmon and sardines.

Foods to Avoid
White bread, White rice
Maida - Naan, Pasta
Carbonated drinks, squashes, sweet nimbu pani or lassi
Candy and chocolate and sugary deserts
Salty snacks- Pakoras, Samosas, Mathris, Chips, Namkeen's
Bakery products - Muffins, breakfast pastries, cakes
Puri, Paranthas, Kachoris,
Processed and canned foods.
Avoid alcohol, cocktails as well as mocktails.

Facts about Dietary fats

Fat is important for our overall health. Not all fats are bad, some fats are important to keep our heart healthy other types of fat should be restricted. 2-3 tablespoons of unsaturated fat (monounsaturated and polyunsaturated fat) each day are good for the heart. This amount includes oil used for cooking and salad dressings.

Unsaturated Vegetable oils	Saturated Fats
<ul style="list-style-type: none">• Canola• Corn• Flaxseed• Olive• Peanut• Soybean• Sunflower	<ul style="list-style-type: none">• Butter• Hard margarine• Lard and shortening• Higher fat milk, cheese and yogurt• Fatty cuts of meat and chicken with the skin on

4. Physical Activity: Good amount of physical activity is also important. Try to get as much activity as possible during the daily schedule. Try to avoid sitting for extended periods. Aim for 3-5 hours of moderate activity every week, 3 sessions of high intensity exercise(High intensity interval training). with 10 minutes of activity and work up to longer times as your body adjusts. Exercise can help control blood sugar, lower risk for heart disease and diabetes even if you don't lose weight.

a). Cardio : Good for reducing insulin resistance, boosting fertility and stabilising mood. Moderate exercise like brisk walking, jogging, cycling or swimming are all good for PCOS.

b) Strength Training: Bodyweight exercises like squats, push ups or tricep dips improve the function of insulin in your body but can also boost your metabolism by building more muscle mass.

c) Aerobic Exercise: Any type of aerobic exercise will help you lose weight, provided you exercise at least at a moderate pace for long enough. The Center for Young Women's Health recommends you work up to 60 minutes of aerobic exercise at least five days a week. Certain activities obviously will burn more calories than others and can help speed efforts.

d) Interval Training: Interval training involves short, intense bursts of activity followed by a rest period of low-impact exercise, such as doing a set of sprint. Interval training can maximize fat loss while reducing the amount of time you exercise.

GENERAL DO'S & DONT'S

Don't's

- 1. Smoking:** Smoking can increase your risk for heart disease, atherosclerosis (thickening of blood vessels), and diabetes. PCOS increases this risk.
- 2. Eat high sugar food:** PCOS is linked to insulin resistance which alters the way your body is able to process and deal with sugar. If left unchecked, insulin resistance can lead to diabetes and significantly worsen complications. You need not avoid sugar completely just focus on eating natural and try to eliminate as many processed foods as possible from your diet.
- 3. Be a couch potato:** take a walk, dance, play games with your friends, avoid being on the phone all the time.
- 4. Ignore your symptoms:** Let your doctor know if you are consistently missing periods > than 40 days or if there is irregular heavy and prolonged bleeding.
- 5. Underestimate your need for sleep:** Most people need six to eight hours of uninterrupted sleep each night. Not having enough sleep affects hormones that control hunger. Getting enough sleep can help you lose weight and make you feel better.
- 6. Take your medication irregularly:** Make sure you understand how and when to take your medication. Medicines like birth control pill given to regulate menses if not taken regularly lead to breakthrough bleeding.
- 7. Ignore symptoms of depression:** Depression needs to be taken care of by health professionals. It is known that women with PCOS are significantly more likely to have problems with depression. You might be depressed if you are having symptoms like sadness, difficulty eating or sleeping weight loss or gain, or sleeping and eating too much. Consult a doctor or a counsellor immediately.

Dos'

1. Try to fit in moderate activity and or vigorous activity often. Exercise helps to improve your hormonal profile and should be done even if you are not overweight.
2. Eat healthy foods.
3. Lose weight if you are overweight. Indian women BMI should be 23.
4. All women with PCOS must have a baseline check of their sugar and lipids.
5. Regular tests for diabetes, high blood pressure, high lipids may be required. Please check with your doctor.
6. Treatment for excessive body & facial hair or acne take time to show effect. Don't lose heart.
7. If you are feeling sad or depressed talk to a counsellor or to other women who have PCOS.