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Dietary composition in PCOS

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Abstract

One out of 10 women of childbearing age experience polycystic ovary syndrome (PCOS). PCOS can also lead to other serious health challenges, such as diabetes, depression, cardiovascular problems and increased risk of endometrial cancer. Two of the primary ways that diet affects PCOS are weight gain and insulin production and resistance. This hormonal imbalance can be treated by PCOS diet. Naturally growing nutritional food is abundant in India which can help us to treat PCOS. PCOS is aggravated by overweight and improper eating habits. Improvement in ovulation and menstrual cycle can be regulated by proper diet and exercise. Daily routine should have Yoga and Meditation. By losing 10% of the weight majority of the women can overcome this problem which can be achieved by having healthy diet and following healthy lifestyle. Things which are a “NO, NO” are carbonated drinks, junks food, raw sugar, processed food, additives dairy products (because of testosterone is potentiating effect), fat rich red meat (it will lower the metabolism of the body).

Keywords: Polycystic ovary syndrome, diabetes, cardiovascular problem, exercise, yoga and meditation

Introduction

PCOS is a medical problem affecting the women of childbearing age. "PCOS is really a syndrome because it's not just one disease. It's a constellation of symptoms" ^[1]. It causes hormonal imbalance and affects ovulation. In PCOS, male hormone Androgens becomes the dominating hormone rather than the female reproductive hormones- estrogens and progesterone. This leads to development of cyst in the ovary which occurs because of disturbance in the release of the eggs – causing infertility in women ^[1]. This syndrome occurs in 5 – 10% of childbearing aged (15- 44 years).

There is no exact cause of PCOS, though doctors and experts believe that some women have a predisposition to it and it may also run in the family. In PCOS, menses are irregular but if this symptom is not there then many cases go undetected. Diabetes, infertility, acne, weight – gain, oily skin, migraine, excessive hair growth and cardiovascular problem are some of the other symptoms. Irregular period leads to increase chances of uterine cancer. Less common symptoms are mood swing and depression. It can be detected by conducting blood test and ultrasound ^[2]. Irregular menstrual cycle, weight gain or loss, excessive hair growth, and improper ovulation are the complications of hormonal imbalance in PCOS cases. This leads to non release of eggs from the ovaries thus forming cyst in them ^[3].

Naturally growing nutritional food is abundant in India which can help us to treat PCOS. PCOS is aggravated by overweight and improper eating habits. Improvement in ovulation and menstrual cycle can be regulated by proper diet and exercise. Healthy diet and weight loss can help many women overcome this problem. A diet full of fibers, folic acids, proteins, and green vegetables is a diet of PCOS case. The diet should depend upon the type of body and its mechanism ^[4].

Aim should be losing body fat in PCOS

- Follow a healthy Indian diet plan for PCOS
- regular exercise ^[5]

Two of the primary ways that diet affects PCOS are insulin resistance and production and weight management. Insulin has a major role in PCOS so by managing insulin level by PCOS diet, people can manage the condition.

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Majority of the women in PCOS have insulin resistance. More than half of those with PCOS will have pre diabetes or developed diabetes before the age of 40. How body process insulin will determine the development of diabetes. People with PCOS feel better if they maintain a healthy weight with a diet that meets a person's nutrition needs and promotes good insulin level [6].

To minimize the problem, one should increase their intake of spices like cinnamon and ginger, prebiotics, probiotics, and antioxidants. By increasing the intake of low glycemic index foods, complex carbohydrates and micronutrients like selenium, magnesium and chromium suffering in patient with PCOS can be reduce [7].

Diet advice to the PCOS women should have moderate intake of complex carbohydrates, high protein and fair intake of healthy fats. Consume high fiber whole grains, millets, fibrous fruits and vegetables, sprouts, egg whites, chicken, fish, low-fat dairy products and omega 3 rich oil [8].

A beneficial PCOS diet should include the following foods:

- natural, unprocessed foods
- high-fiber foods
- fatty fish, including sardines, tuna, salmon and mackerel
- kale, spinach, and other dark, leafy greens
- dark red fruits, such as blackberries, blueberries, cherries and red grapes
- broccoli and cauliflower
- dried beans, lentils, and other legumes
- healthful fats, such as olive oil, coconuts and avocados
- nuts, including walnuts, almonds, pistachios and pine nuts
- dark chocolate in moderation
- Spices, such as turmeric and cinnamon [9].

What to eat from each food group? [2]

Cereals: Multigrain bread, brown bread, whole wheat, bran flakes, whole wheat porridge, barley, oats, museli, quinoa, oat meal.

Pulses: Beans, Green moong, yellow moong, chana dal and whole pulses.

Dairy products: Soy milk, skimmed or toned milk, tofu, paneer and yoghurt.

Vegetables: Broccoli, carrots, peas, mushrooms, cauliflower, peppers, tomatoes, onions, celery, spinach, lettuce [3].

Fruits: Apples, oranges, peaches, watermelons, papaya, pears, berries, and plums.

Nuts: Almonds, walnuts and flaxseeds

PCOS women - Dietary tips

Eat the colours as of 'traffic light'

Antioxidants and nutrients rich food are dark green and leafy vegetables like lettuce and broccoli and red fruits like berries. In daily life take plant proteins like dried beans, legumes and lentils [4].

Can opt for a Diabetic Diet

Women with PCOS are insulin resistant and should opt for diabetic diet and avoid deep-fried foods, simple carbohydrates, sugar, honey and jaggery. But diet should be rich in fiber and low in carb and processed foods. Opt for foods with low glycemic index – made from whole grains, brown rice, poha, whole wheat, wheat flour and wheat pasta [2].

A Low Glycemic Index (GI) Diet

The body digests foods with a low GI more slowly thus the

insulin level do not rise abruptly. Legumes, nuts, fruits, starchy vegetables, seeds and other unprocessed, low-carbohydrate foods, whole grains are present in low GI diet. [9].

An Anti-inflammatory diet

Anti-inflammatory foods, such as leafy greens, berries, fatty fish, and extra virgin olive oil, may reduce inflammation-related symptoms, such as fatigue [9].

The DASH diet

The recommended Dietary Approaches to Stop Hypertension (DASH) diet is to reduce the risk or impact of heart disease. It may also help manage PCOS symptoms. A DASH diet is rich in fruits, vegetables, whole grain, fish, poultry, and low-fat dairy produce. The diet discourages foods that are high in saturated fat and sugar [9].

Eat Enough Protein

Protein helps increase feelings of fullness and stabilizes blood sugar after a meal. It may also aid weight loss by reducing cravings, helping burn more calories, and managing hunger hormones. Healthy, high protein foods include eggs, nuts, dairy, meat, and seafood [10].

Eat Healthy Fats

Having plenty of healthy fats in diet gives a feeling of satisfaction after meals and it can tackle weight loss and other symptoms of PCOS. Examples of healthy fats include nut butters, avocado, olive oil, and coconut oil. Combining a healthy fat with a protein source can further increase the filling effects of meals and snacks [10].

Eat Fermented Foods

Important role in metabolism and weight maintenance is played by healthy gut bacteria. Positive impacts on weight loss by certain probiotic strains [11]. As such, eating foods high in probiotics — such as yogurt, kefir, sauerkraut, and other fermented foods — may help increase the number of beneficial bacteria in gut.

Have Seeds

Flaxseeds and sesame seeds should be used for PCOS women but do not consume more than 20 grams per day [12].

Have Herbs

Herbs like meethidana, flaxseeds and cinnamon to keep hormones in control [12].

Green Tea

Green tea is a stress reliever. It regularizes the body's metabolism, removes toxic wastes and helps in reducing cholesterol [13].

Green Juice

Green juices when taken on an empty stomach remove toxins from the body. Therefore drinking it on empty stomach is very important. The antioxidant-rich juice reduces the inflammatory damage done to the ovaries and other blood vessels in the body [8].

Rice Bran Oil

Use rice bran oil to control fat deposition, to reduce weight and reduce stress on the arteries. Olive oil also used for cooking can be taken into consideration. Or a perfect blend of different oils is recommended [2].

Dietary guidelines for Indian diet plan for PCOS ^[14]

- Replace regular wheat flour with any multigrain flour or millet flour. The high fiber flour has a maximum satiating effect so the quantity ingested is less. Should include quinoa, oats or cereals with bran. This helps in weight loss, especially fat loss.
- At least 1 – 2 fruits should be taken in a day. Sweet fruits fulfill craving for desserts. As fruits have high fiber content this gives a feeling of fullness and satisfies the small hunger between the meals. Due to high content of simple sugars, avoid any fruit juices. Simple sugars increased serum cholesterol and lead to weight gain.
- Dietary fiber reduce glucose surge which in turn helps in controlling serum cholesterol and aid in weight loss. These are present in vegetable soup or green salad.
- Incorporation of low-fat dairy products, egg whites, pulses and dals increases the protein in the diet. This, in turn, regulates blood sugars, controls hormone action and reduces weight and regularizes ovulation cycle.
- When cinnamon taken with warm water at night washes out toxins from the body and satisfies the thirst that can be mistaken for hunger. Antioxidant property of the water is increase when cinnamon is added to water. Insulin sensitivity is increased and resistance is decreased by cinnamon.
- Do not skip any meals. If more meals skipped, tend to put on more fat in the body instead of losing weight.
- Water retention occurs in PCOS women and the best way to avoid that is by having enough water and eating small and frequent meals. Consume 5 – 6 meals per day. This avoids the sugar release and insulin surge in the body therefore avoiding insulin resistance.

PCOS Diet ^[7]

Breakfast: Healthy and nutritious food should be first meal of the day. Cereals, cornflakes, wheat flakes, oats, milk with low fat and sprouted grams will be ideal healthy breakfast.

Seasonal Fruits, grams, lahiya and some light snacks which can be taken throughout the day at regular intervals can help in losing weight- by enhancing the metabolism of the body by 30%.

Liquid food items are important in the diet. For regulating menstrual cycles and eliminating fat from the body low-fat milk and vegetable juices are ideal.

Lunch: Two vegetables (one leafy, one green vegetable), two rotis (multigrain preferably), curds, salads, protein rich food (pulses, rajma or beans).

Tea Time: The complications of PCOS can be reduce by Green Tea which has a high anti- inflammatory property. To prevent acidity beverages must not be taken empty stomach.

Dinner: Full of leafy salad and bowl of fresh soup will stimulate the proper functioning of the nervous system, thus reducing stress and anxiety. Dinner should be light and nutritious so that women feel fresh, fit and light next morning.

Exclude these from diet in PCOS ^[15, 2]

- Reduce Carbohydrate Intake – Lowering carbohydrate consumption may help manage PCOS due to carbohydrate impact on insulin levels. Insulin is necessary for blood sugar management and energy storage in our body. High levels of insulin with increased body fat and weight gain in women with PCOS.
- Avoid red meat – Eating meat can increased the risk of infertility. Processed meats like hot dogs, sausages and luncheon meats, steaks, pork and hamburgers all should be avoided.
- Do not eat saturated and hydrogenated fats – Saturated

fats are found in many foods mostly in animal and dairy – based products. They raise cholesterol and calorie. Baked goods are full of these fats, so they should be avoided.

- Avoid sugar and refined cereals – refined carbohydrates – pastries, white bread and biscuits should be avoided.
- To prevent the increase in the level of bad cholesterol and rapid weight gain – avoid completely carbonated drinks and Junk foods.
- Testosterone potentiation should be minimized by taking less dairy Products. Dairy products can stimulate the Androgens in PCOS cases which are already on the higher side. Thus further increasing the hormone imbalanced.
- Fat-rich food (red meat) will lower down the metabolism of the body resulting in a weight gain of up to 50%.
- Completely exclude - Raw sugar, processed food, and additives in PCOS diet because they will lead to inflammation and complications in the treatment.
- Adversely affecting fertility are alcohol and excessive coffee. So they should be kept out of the menu.

Include	Avoid
Whole wheat products	Refined flour products/maida
Whole grain / whole wheat bread	White bread
wholegrain / whole wheat pasta	white pasta
Barley, natural diuretic fruits	Fast foods
Oats, corn	Cakes, cookies, sweets, chocolates
Raw fruits and vegetables	High fructose corn syrup
Fresh fish	Sorbitol
Lean meats	Soft drinks and soda
Protein shakes	Bengali mithai, sweets, desserts

[12]

Other lifestyle modifications that help to cure PCOS**1. Drink plenty of water**

PCOS makes one prone to constipation and water retention. Three liters of water per day is the must for PCOS women. Flavored water will help. Every hour drink one glass of water without fail. This way, incorporate it in our daily routine and stay hydrated throughout the day. Detoxification can be achieved by regular intake of water. Another reason for not wanting to drink water is because women feel bloated all the time, but drinking more water will actually help them in flushing accumulated water thus feel lighter ^[12].

2. Regular Exercise

Exercise along with following the above mentioned Indian diet plan for PCOS. Reduction of body fat should be the main aim rather than only reducing bodyweight. Insulin sensitivity, cholesterol, and visceral fat was improved in women with PCOS who did 3 hours of aerobic exercise per week for 3 months even the weight loss was not prominent. Serotonin and dopamine (feel-good hormones) are released with exercise and keep stress levels low. Exercises on empty stomach are better as metabolize fat as an energy source thus, reducing insulin resistance. This also results in weight loss.

3. Free life of stress:

To maintain clam and remain stress free 1-hour meditation is must. Yoga, music, doing something one really loves, and taking lifeless less seriously will reduce the stress. Stress leads to weight gain so reducing it will help in PCOS.

4. Quit smoking for good

Smoking stimulates androgen production, the main culprits of PCOS characteristics. So, kick the butt for good.

5. Say NO to alcohol:

It is a basic fact that alcohol adversely affects the liver function, which in turn affects hormone balance. Saying NO to alcohol will not only keep your liver healthy but also check PCOS progression.

6. Get Enough Sleep

Sleep is increasingly acknowledged as central to health. If you have PCOS, you may experience sleep disturbances, including excessive daytime sleepiness, sleep apnea, and insomnia [16]. Lack of sleep has been shown to increase the activity of hormones that drive hunger, such as ghrelin and cortisol, which may cause you to eat more throughout the day [17]. In fact, insufficient sleep is associated with a higher risk of being overweight or obese [18].

7. Don't under eat

Long-term calorie restriction may slow down metabolism. The main focus is to reduce the weight gain through calorie restriction but actually the end result is weight gain because body adapts to this restriction by reducing the number of overall calories it burns. Instead of restricting calories, it may be best to focus on eating whole foods and cutting out unhealthy products [14].

Endnote

PCOS is not a disease to be cured. Healthy diet and healthy life style helps to maintain a balance in a PCOS women life. Every time eat or drink something, either feeding or fighting the disorder. Lose fat to win over PCOS. A balanced diet, medication, and exercise if required are tactics to fight against polycystic ovarian syndrome.

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