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## POLYCYSTIC OVARY SYNDROME

(Sclerocystic ovary syndrome, and Stein–Leventhal syndrome.)

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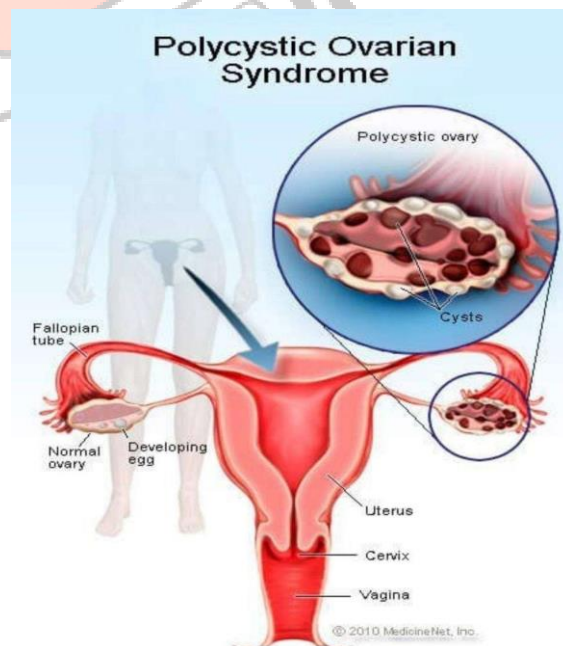
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**Abstract:** Polycystic ovary syndrome (PCOS) is a common health condition in women that involves irregular function of the ovaries. It is a hormonal disorder causing enlarged ovaries with small cysts on the outer edges. The cause of polycystic ovary syndrome isn't well understood, but may involve a combination of genetic and environmental factors. It is a very common condition affecting 5% to 10% of women in the age group 12–45 years. It is a problem in which a woman's hormones are imbalanced. There are four types of PCOS: Insulin-resistant PCOS, Inflammatory PCOS, Hidden-cause PCOS, and Pill-induced PCOS. Symptoms include menstrual irregularity, excess hair growth, acne and obesity. Treatment includes A pelvic exam, blood test and An ultrasound. PCOS is one of the most common disorders affecting women of reproductive age. As a syndrome, it has multiple components, including reproductive, metabolic, and cardiovascular, with long-term health concerns that cross the life span. Although not well understood, insulin resistance seems to underlie many of the clinical manifestations of PCOS.

**Index Terms -** Polycystic ovary syndrome, Hormones, Genetic, Insulin, Reproductive, Cardiovascular, Clinical manifestations.

### I. INTRODUCTION

Polycystic ovary syndrome (PCOS) is a common health condition in women that involves irregular function of the ovaries. A hormonal disorder causing enlarged ovaries with small cysts on the outer edges. The cause of polycystic ovary syndrome isn't well understood, but may involve a combination of genetic and environmental factors. It is a common health condition in women that involves irregular function of the ovaries. It is a very common condition affecting 5% to 10% of women in the age group 12–45 years. It is a problem in which a woman's hormones are out of balance. It can cause problems with menstrual periods and make it difficult for her to conceive. PCOS is the most common endocrine disorder. The earliest known description of what is now recognized as PCOS dates from 1721 in Italy. In 1935, Stein and Leventhal Described 7 women with bilateral enlarged PCO, amenorrhea or irregular menses , infertility and masculinizing Features. This Paper Introduced Clinicians to the concept of Reproductive endocrinopathies. The Onset Of Symptoms Tends To Be Recognized At Or Soon After Puberty. Despite Similarities With Other Conditions , PCOS Occurs Far More Frequently.It is a disorder of the adrenal-ovarian endocrine axis. It may present with a variety of symptoms that can remit or relapse over time. It is one of the leading causes of infertility.



### II. CLASSIFICATION

There are four types of PCOS: Insulin-resistant PCOS, Inflammatory PCOS, Hidden-cause PCOS, and Pill-induced PCOS.

#### 1. Insulin-resistant PCOS -

This is the most common type of PCOS. This type of PCOS is caused by smoking, sugar, pollution and trans fat. In this, high levels of insulin prevent ovulation and trigger the ovaries to create testosterone.

#### 2. Pill induced PCOS -

This type is the second most common PCOS. It gets developed due to the birth control pills which suppress ovulation. For most of the women, these effects do not last long and they resume ovulating after the effect of the pill is over

#### 3. Inflammatory PCOS -

In PCOS due to inflammation, ovulation is prevented, hormones get imbalanced and androgens are produced. Inflammation is caused due to stress, toxins of Environment and inflammatory dietary like gluten.

#### 4. Hidden PCOS -

This is a simpler form of PCOS, once the cause is addressed then it takes about three to four months to get resolved. Causes of Hidden PCOS: Thyroid disease, deficiency of iodine (ovaries need iodine), vegetarian diet ( it makes you zinc deficient and the ovaries need zinc) and artificial sweeteners.

### III. EPIDEMIOLOGY

Pcos affects 5% to 10% of women of Reproductive age which approximately 4 million individuals.

It's prevalence among infertile women is 15 % to 20% .

It is the most common endocrine disorder of women in this age group.

It is often seen in the student health population and general medical practice but most often diagnosed when a women presents with infertility.

It's associated with:-

- Metabolic syndrome ( cardiovascular disease, insulin resistance, sleep-disordered breathing and excessive daytime , sleepiness, NAFLD)
- Type 2 diabetes
- Dysfunctional uterine bleeding
- Endometrial cancer
- Psychosocial (depression, anxiety, cosmetic concerns)

Hereditary:-

- Affected mother 35%
- Affected sister 40%

### IV. SYMPTOMS

■Irregular periods :- People with PCOS typically have irregular or missed periods as a result of not ovulating. Infrequent periods are a common sign of PCOS. For example, you might have fewer than nine periods a year with more than 35 days between periods. Polycystic ovaries. Although some people may develop cysts on their ovaries, many people do not. Your ovaries might be enlarged and contain follicles that surround the eggs. As a result, the ovaries might fail to function regularly.

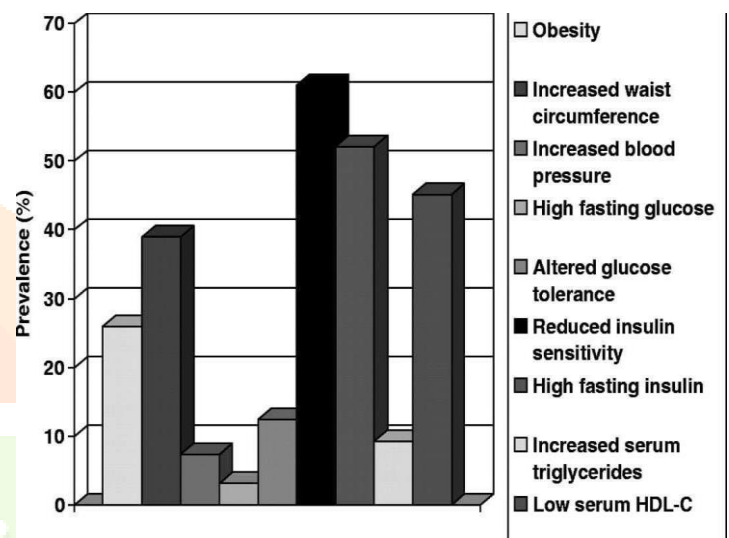
■Excess androgen :- Elevated levels of male hormone may result in physical signs, such as excess facial and body hair (hirsutism), and occasionally severe acne and male-pattern baldness.

■Other symptoms include:

» Weight gain :- About half of people with PCOS will have weight gain and obesity that is difficult to manage.

» Fatigue :- Many people with PCOS report increased fatigue and low energy.

» Unwanted hair growth (also known as hirsutism) :- Areas affected by excess hair growth may include the face, arms, back, chest, thumbs, toes, and abdomen.



### Common Symptoms





- » Thinning hair on the head :- Hair loss related to PCOS may increase in middle age.
- » Infertility :-PCOS is a leading cause of female infertility. However, not every woman with PCOS is the same.
- » Acne :-Hormonal changes related to androgens can lead to acne problems.
- » Darkening of skin :- You may see thick, dark, velvety patches of skin under your arms or breasts, or on the back of your neck.
- » Mood changes :- Having PCOS can increase the likelihood of mood swings, depression, and anxiety.
- » Pelvic pain :- Pelvic pain may occur with periods, along with heavy bleeding.
- » Sleep problems :- People with PCOS often report problems such as insomnia or poor sleep.
- » Depression :- Both hormonal changes and symptoms like unwanted hair growth can negatively affect your emotions.

## V. TREATMENT

### ■Lifestyle Changes

Often, the first action that doctors recommend for women with PCOS is to make lifestyle changes, like losing weight through a healthier diet and more physical activity. These changes can minimize many PCOS symptoms and related conditions.

	BREAKFAST	LUNCH	SNACK	DINNER
MONDAY	Multigrain chicken salad sandwich 	Jeera Rice & Lentil Dal curry 	Homemade Chakli 	Chapati with carrot methi subzi 
TUESDAY	Red rice adai with aviyal 	Whole wheat pasta with vegetables 	Millet cookies 	Methi thepla with pickle & chutney 
WEDNESDAY	Ragi Porridge 	Appam with chicken stew 	Whole-grain crackers with peanut butter 	Grilled fish with avocado salad 
THURSDAY	Whole wheat bread & egg white omelette with veggies 	Oats, Vegetable & brown rice khichdi 	Carrot sticks & Hummus 	Chapati with green peas masala 
FRIDAY	Soya Khaman Dhokla 	Tomato rice, beetroot salad & curd 	Masala peanuts 	Grilled, roasted or homemade tandoori chicken with salad 
SATURDAY	Onion & tomato Uttapam 	Brown rice with fish curry & mixed sprouts subzi 	Baked sweet potato fries 	Chapati with egg curry 
SUNDAY	Quinoa Upma 	Chicken pulao with raita 	Banana or any other fresh seasonal fruit 	Chapati with whole masoor dal & bhindi sabji 

### ■Hormone Therapy and Medication for Ovulation

Clomid (clomiphene) is the most common PCOS treatment; it helps with ovulation and follicle development.

■PCOS patients may also be given follicle-stimulating hormones (FSH), progesterone, or treatment to specifically affect estrogen production.

“We use hormones to help rebuild the endometrial cycle.

#### Insulin-Sensitizing Agents

■ These medications make the body more responsive to insulin and keep glucose levels more stable. In women with PCOS, they may also help:

» Clear up acne and reduce hair growth

» Improve weight loss

» Lower cholesterol levels

» Make periods more regular

» Slightly reduce infertility.

» Antiandrogens

» These medications can lower androgen levels, or even prevent the body from producing the hormone. In women with PCOS, this helps to reduce excess hair growth and clear up acne.

» Just as with insulin-sensitizing medications, antiandrogens are not approved by the FDA for the treatment of PCOS but your doctor may recommend them for you.

## VI. PCOS RELATED TO FERTILITY

■ PCOS is one of the most common causes of female infertility. Many women discover they have PCOS when they're trying to get pregnant and are unsuccessful.

■ During each menstrual cycle, the ovaries release an egg (ovum) into the uterus (womb). This process is called ovulation and usually occurs once a month.

■ But women with PCOS often fail to ovulate or ovulate infrequently, which means they have irregular or absent periods and find it difficult to get pregnant.

■ The majority of people with PCOS who are trying to conceive will become pregnant and give birth without any fertility treatment at least once in their life. However, people with PCOS use birth control at lower rates than people without PCOS.

■ For some women with PCOS, fertility tablets do not result in ovulation or pregnancy, and they require fertility injections to release an egg. Fertility injections (Follistim®, Gonal-F®, Bravelle®, and Menopur®) contain the same hormone the brain releases to signal the ovary to produce eggs. Rather than producing one egg in a month, most women on fertility injections will produce two or more eggs.

■ This treatment requires closer monitoring with transvaginal ultrasounds and several blood draws to determine the woman's estradiol level, which is a hormone produced in the ovary.

■ Clomid is the most commonly used fertility drug overall, and also the most commonly used treatment for women with PCOS. Many women with PCOS will conceive with Clomid.

■ Most women with PCOS have a 20 to 40 percent chance of getting pregnant with IVF treatment. Women who are 35 years old and older or who are overweight have a lower chance of getting pregnant.

■ Although it is difficult to give statistics as cases vary so much and different treatments have different success rates, most women with PCOS will be able to have a baby with fertility treatment. For women who are under 35, this is even more the case.

## VII. DISCUSSION AND CONCLUSION

■ Polycystic ovary syndrome (PCOS), is a complex neuroendocrine - Metabolic disorder.

Polycystic ovarian syndrome seems to have many of the hallmarks of the Metabolic disorder.

■ In clinical practice, women with PCOS are seen primarily for menstrual irregularity, androgen excess, and infertility.

Chronic anovulation of PCOS implies unopposed estrogen and increased risk of Endometrial cancer.

■ PCOS appears to be associated with an increased risk of metabolic aberrations, including insulin resistance and hyperinsulinism, type 2 diabetes mellitus, dyslipidemia, cardiovascular disease, and endometrial carcinoma.

■ Study as regard the prevalence of Metabolic syndrome

among obese PCOS patients it was 45 % compared to 15 % among obese control group. And was 40 % among non-obese PCOS compared

to 5 % among non-obese control group.

■ In conclusion we observed that prevalent among PCOS patients nearly three folds, which makes them at higher risk for development of CVD, type II diabetes, Hypertension and other metabolic disorders.

■ From that we can say that the consequences of the polycystic ovary syndrome extend beyond the reproductive axis; women with the disorder are at substantial risk for the development of metabolic and cardiovascular abnormalities similar to those that make up the metabolic syndrome.

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