

# Difference Between Polycystic Ovaries and PCOS

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## Key Difference – Polycystic Ovaries vs PCOS

PCOS or Polycystic ovarian syndrome is an ovarian disorder characterized by multiple small [cysts](#) within the [ovary](#) and by excess androgen production from the ovaries. On the other hand, polycystic ovary can be defined as an ultrasound scan image of the ovaries that appears to be polycystic. **Polycystic ovarian syndrome is considered as a fairly serious pathological phenomenon, but polycystic ovaries are [benign](#) conditions which are most often found accidentally during an ultrasound scan carried out for some other problem.** This is the key difference between polycystic ovaries and PCOS.

## What is Polycystic Ovarian Syndrome (PCOS)?

Polycystic ovarian syndrome is an ovarian disorder characterized by multiple small cysts within the ovary and by excess androgen production from the ovaries. (and to a lesser extent from the adrenals). High levels of androgens are present in blood during PCOS due to reduced levels of sex hormone binding [globulin](#). It is thought that there is increased GnRH secretion in PCOS, which causes an increase of LH and androgen secretion.

In PCOS, hyperinsulinemia and insulin resistance are frequently observed. Due to this, the prevalence of [type 2 diabetes](#) is 10 times higher in the women with PCOS than in the normal population. PCOS increases the risk [hyperlipidemia](#) and [cardiovascular diseases](#) by several folds. The mechanism that connects the pathogenesis of polycystic ovaries with anovulation, hyperandrogenism and [insulin resistance](#) is still unknown. Most often, there is a family history of type 2 diabetes or PCOS that suggests the influence of a genetic component.

## Clinical Features

Shortly after menarche, most patients having PCOS, suffer from [amenorrhea](#)/ oligomenorrhea and/ or hirsutism and [acne](#).

- Hirsutism – This can be a reason for severe mental distress in young women and can have a negative impact on the social interactions of the patient.
- Age and speed of onset – Hirsutism related to PCOS usually appear around menarche and increases slowly and steadily in the teens and early
- Accompanying virilization
- Menstrual disturbances
- [Overweight or obesity](#)

## Investigations

- Serum total [Testosterone](#) – It is often elevated
- Other androgen levels ex: Androstenedione and Dehydroepiandrosterone sulfate
- 17 alpha-hydroxyprogesterone levels
- Gonadotrophin levels
- [Estrogen](#) levels
- Ovarian ultrasound-This may display thickened capsule, multiple 3-5mm cysts, and a hyperechogenic stroma
- Serum prolactin

Dexamethasone suppression tests, CT or MRI of adrenals and selective venous sampling are recommended if an androgen-secreting tumor is suspected clinically or after investigations.

## Diagnosis

Before arriving at a definitive diagnosis of PCOS, the possibility of other causes such as CAH, [Cushing syndrome](#) and virilizing tumors of the ovary or adrenals should be excluded.

According to Rotterdam Criteria published in 2003, at least two of the three criteria mentioned below should be present to make a diagnosis of PCOS.

- Clinical and/or biochemical evidence of hyperandrogenism
- Oligo-ovulation and/or anovulation
- Polycystic ovaries on ultrasound

## **Management**

### **Local therapy for Hirsutism**

Depilatory creams, waxing, bleaching, plucking or shaving are usually used in minimizing the amount and the distribution of unwanted hair. Such methods do not worsen or improve the underlying severity of hirsutism. Using a variety of 'laser' hair removal systems and electrolysis are more 'permanent' solutions. These methods are much effective and expensive but still require repeated long-term treatment. Eflornithine cream can inhibit hair growth but is effective in only a minority of cases.

### **Systemic Therapy for Hirsutism**

Long-term treatment is always required as the problem tends to recur when the treatment is discontinued. Following drugs can be used in the systemic treatment of hirsutism.

- Estrogen
- Cyproterone acetate
- Spironolactone
- Finasteride
- Flutamide

### **Treatment of Menstrual Disturbances**

Administration of cyclical estrogen/progestogen will regulate the menstrual cycle and remove the symptoms of oligo-or amenorrhea. Due to the recognized association between PCOS and insulin resistance, Metformin (500mg three times daily) is commonly prescribed to the patients with PCOS.

### **Treatment for Fertility in PCOS**

- Clomifene
- Low-dose FSH

## **What is Polycystic Ovary?**

Polycystic ovary can be defined as an ultrasound scan image of the ovaries that appears to be polycystic. Polycystic ovaries usually contain a high density of partially mature follicles. It is not a disease. The accompanying elevated androgen

levels and other symptoms of PCOS are not seen in this condition. PCO is prevalent among up to one-third of women of childbearing age. Although PCO is present in early life, it is diagnosed incidentally during other health checkups due to the lack of symptoms. The presence of polycystic ovaries does not affect fertility.

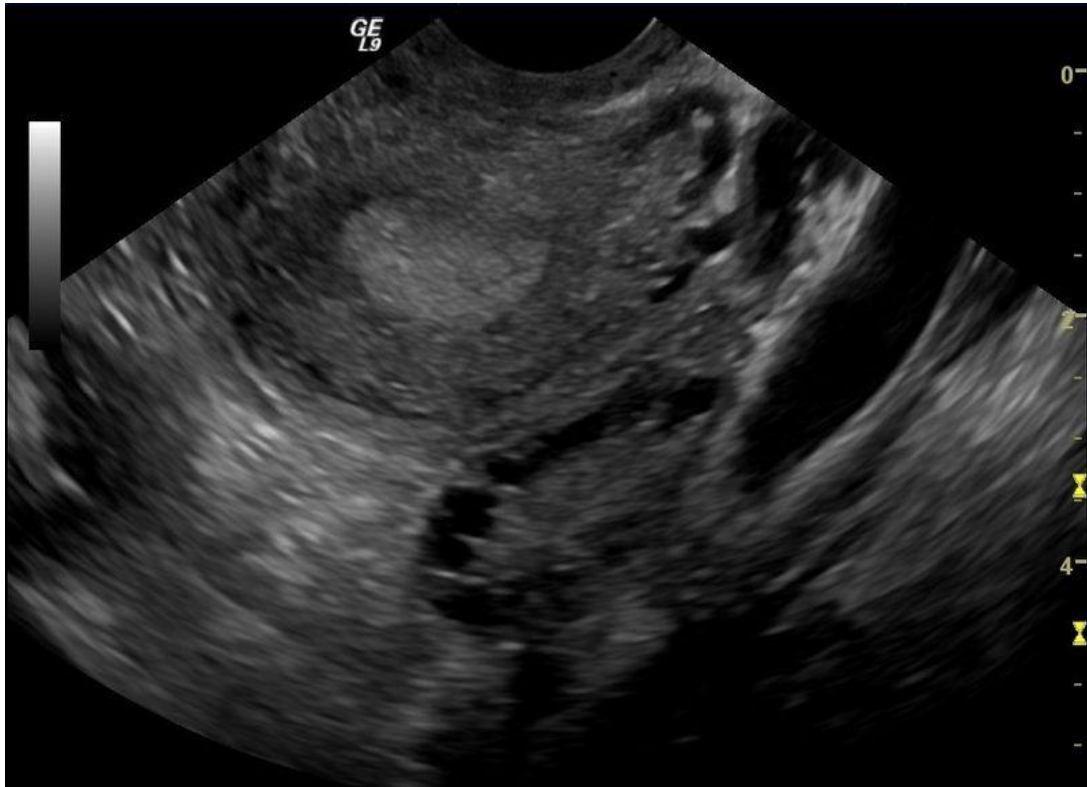


Figure 01: Polycystic Ovary

## What are the similarities between Polycystic Ovary and PCOS?

- Both diseases are pathological conditions affecting the ovaries.
- On an ultrasound scan, the polycystic nature of ovaries can be identified on both occasions

## What is the difference between Polycystic Ovaries and PCOS?

### Polycystic Ovaries vs PCOS

Polycystic ovarian syndrome is an ovarian disorder characterized by multiple small cysts

Polycystic ovary can be defined as an ultrasound scan image of the

within the ovary and by excess androgen production from the ovaries.	ovaries that appears to be polycystic.
<b>Disease Condition</b>	
This is a disease condition.	This is not a disease condition.
<b>Medium of Separation</b>	
Androgen levels in the blood are elevated.	There is no change in the androgen levels in the blood.
<b>Cross Linkage</b>	
Hirsutism and other symptoms are present in this condition.	This condition is symptomless.
<b>Surface Area to Volume Ratio</b>	
This affects fertility.	This does not affect fertility.

## Summary – Polycystic Ovaries vs PCOS

Polycystic ovary can be defined as an ultrasound scan image of the ovaries that appears to be polycystic. Polycystic ovarian syndrome is an ovarian disorder characterized by multiple small cysts within the ovary and by excess androgen production from the ovaries. Despite the similarity in their names in a clinical perspective, these two conditions fall on the two extreme ends of the spectrum that categorize diseases according to their severity. Polycystic ovarian syndrome is a serious condition requiring medical attention whereas polycystic ovaries are a benign condition which is not even considered as a disease. This is the difference between polycystic ovary and PCOS.

### References:

1. Kumar, Parveen J., and Michael L. Clark. Kumar & Clark clinical medicine. Edinburgh: W.B. Saunders, 2009. Print.

### Image Courtesy:

1. “Polycystic ovary” By Schomynv – Own work (CC0) via [Commons Wikimedia](#)

## How to Cite this Article?

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