

## PCOD and PCOS – are they same?

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### Abstract

Women's are blessed for giving the birth to new born. But many of women's suffering from many medical conditions related to that, such as PCOD (poly cystic ovarian disease) and PCOS (poly cystic ovarian syndrome). This are to different medical condition were many women's suffers alot. Every women has pair of ovaries which functionally release the eggs in interval of month which known as menstrual cycle, Ovaries helps to produce female hormones such as progesterone and estrogen which are responsible for characterization of women's such as fertility, period schedule etc. in this medical conditions ovaries get affected and difficulty in producing such hormones which is largely known as hormonal imbalance ,hormonal imbalance is most common in ever women comes in certain time interval. Polycystic ovarian disease is a medical condition where the ovaries release a lot of immature eggs which progressively turn into cyst. In polycystic ovarian syndrome the ovaries produce high level of androgen than usual which may cause difficulty in development and release the eggs. In this review we are trying to give you extra knowledge and how to recover this condition by using homemade remedies.

**Keywords:** PCOD, PCOS, menstrual cycle, progesterone, estrogen, etc

### Introduction

Every women produce eggs in every month of interval in their menstrual period <sup>[1]</sup>. In this period ovaries in women produced eggs, those unfertilized eggs throw outside the body through impure blood. The menstruation period is last for 5-7 days normally <sup>[2]</sup>.in this days women's suffering from severe abdominal cramps and continuation of bleeding <sup>[3]</sup>. the change of hormone production and change in uterus and

ovaries of the female reproductive system may leads in chances of pregnancy. <sup>[4]</sup> The ovaries produced and release the eggs with the progesterone and estrogen <sup>[5]</sup>. Through this condition the uterine lining leads to change in some structural changes like it get swollen. <sup>[6]</sup> This uterine lining receive a unfertilized eggs with impure blood which get out from the body.

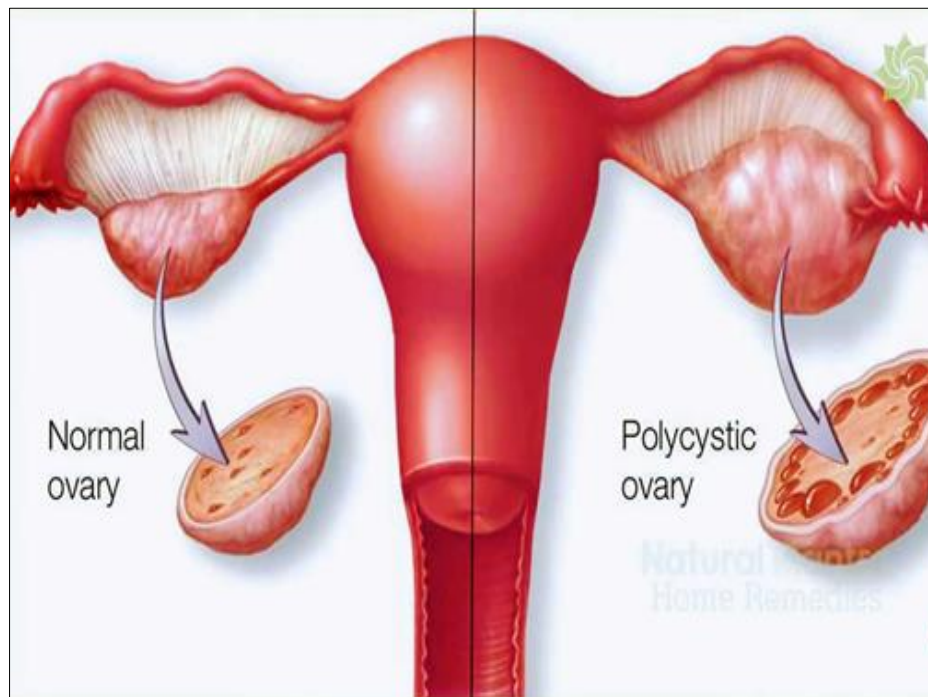


Fig 1

PCOD – POLY CYSTIC OVARIAN DISEASE(7) cause the due to when ovaries contain large amount of immature eggs which ultimately turn into the cyst this condition is known as polycystic ovarian disease. Due to our daily hectic schedule like stressed all the time , uneven diet ,junk food, hormonal disturbance , high body weight etc. the most common cause of this is irregular periods , and because of this abdominal fat gain , facial hair growth generation of some characteristics may happened [8]. Ultimately it will affect during the time of pregnancy. In this medical condition ovaries get swollen inside and become enlarged due to this ovaries produced and secrete large amount of androgens that cause destruction with the women’s fertility and her body [9].

PCOS – POLY CYSTIC OVARIAN SYNDROME this medical condition is very different from the PCOD. This is the medical condition which is related to the metabolic disorder which is more severe than the PCOD [10]. Ovaries

produced large amount of male hormone and due to this there is formation of follicular cyst in the inert lining of ovaries in every month [11]. Which is also again affect to the release of eggs from the ovaries ultimately ovulation get stopped. Hair loss, infertility, facial hair growth, obesity are the symptoms of the PCOS [12].

The women who is suffering from PCOD have similar symptoms as PCOS but they return the ability to ovulate periodically and due to this it can be treatable [13]. While the PCOS condition does not ovulate due to severe hormonal imbalance which disturb the process of ovulation [14].

In both cases PCOD and PCOS symptoms were same. Losing weight, eating a healthy diet which is free from junk foods and with the regular exercise it can improve. Earlier diagnosed of this disease can be treatable by medication and proper guidance by physician.

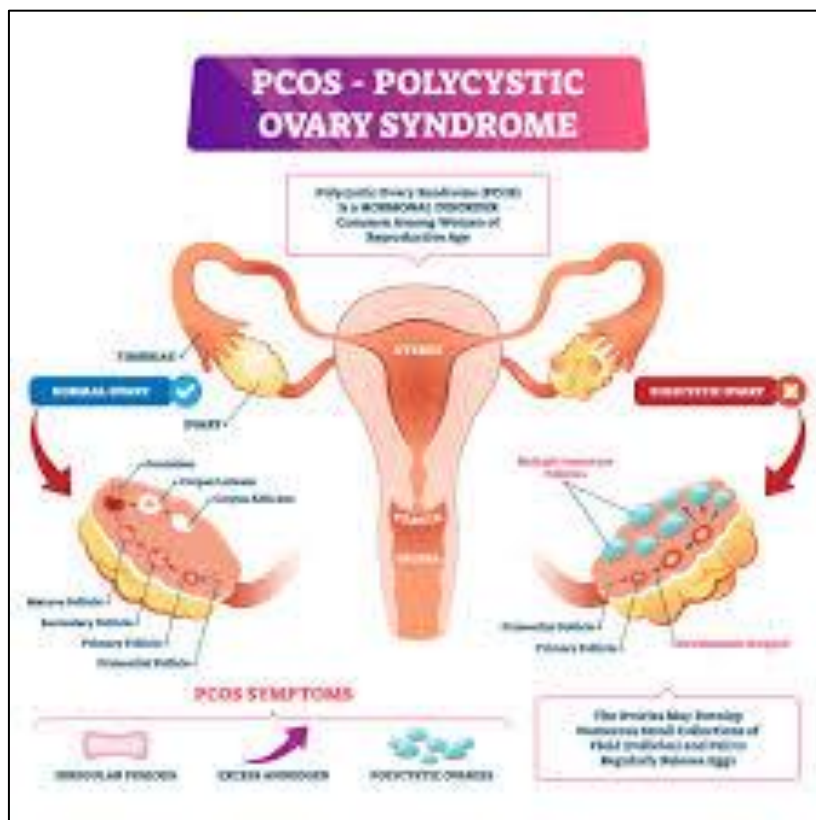


Fig 2

Are PCOD and PCOS Same?

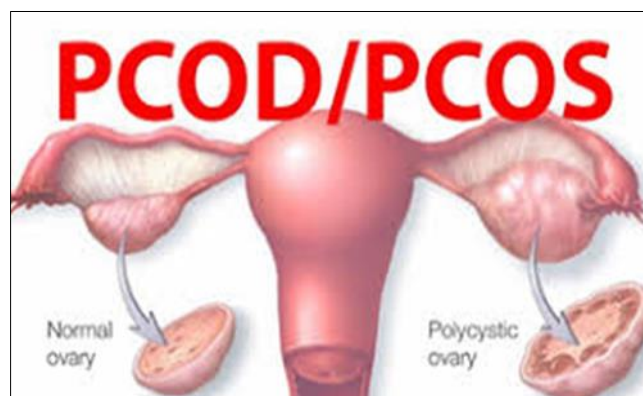


Fig 3

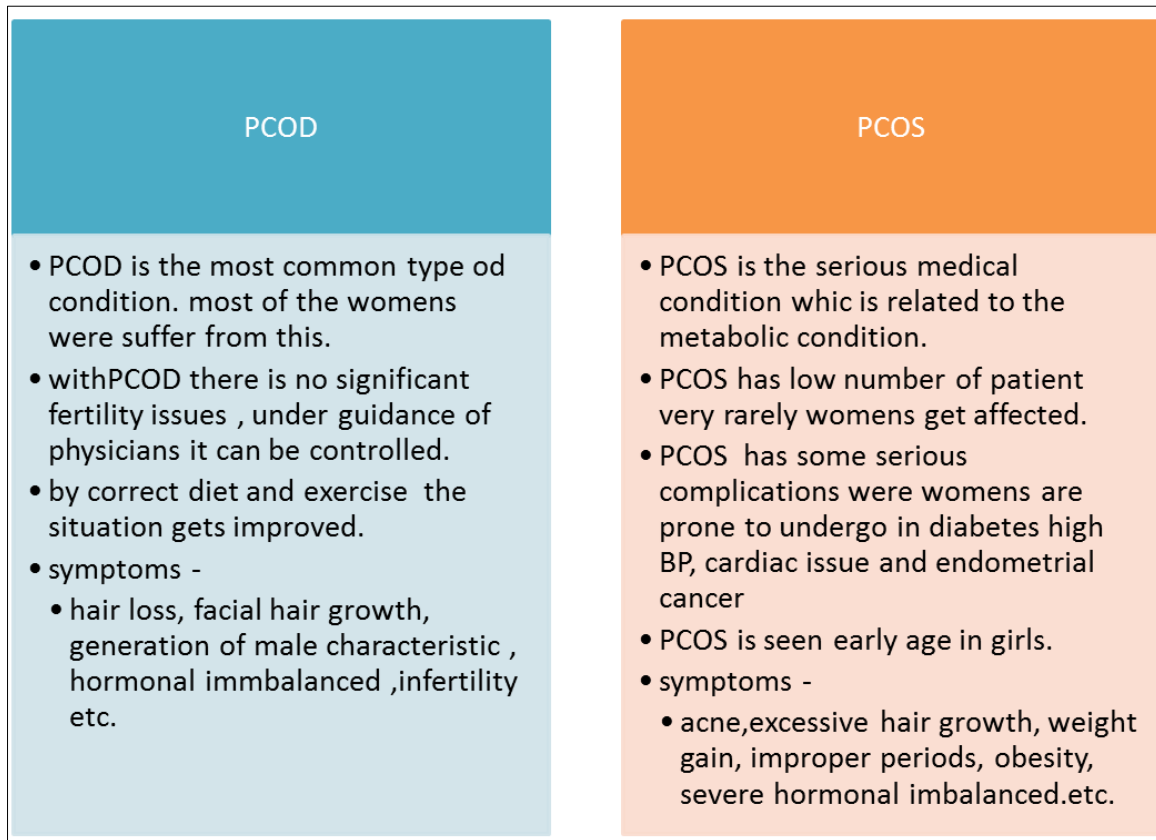


Fig 4

**What Is PCOS?**

As we saw in previous introduction regarding PCOS here we will see the actual condition its symptoms, treatment and its precautions. So, PCOS is the condition which affects your regular periods, fertility, hormones and various aspects regarding daily routine. [15] The studies show that it can be long term affect in any age group. Due to hectic lifestyle a life without exercise and irregular intake of meal and fast food. This disturbs the daily routine of the body and internal hormonal changes [16]. Polycystic ovaries are slightly larger than the normal ovaries, due to presence of large number of follicle inside the ovaries [17]. Follicles are mainly fluid filled spaces within the ovary that release the eggs at the time of

ovulation [18].

A woman has multiple follicles they don't have PCOS. Typically this medical condition diagnosed on the symptoms. The specific cause of PCOS is not been declare yet [19]. as a medical practitioner its beneficial to treat the symptoms which is very useful in this condition. Genetic factor also plays important role in it, if your parents or in family member has this medical history then you have to aware of this disease [20] If it not diagnosed in early stage then its risk developing disease. The symptoms are related to the abnormal level of hormone levels [21].

**Symptoms of PCOS**

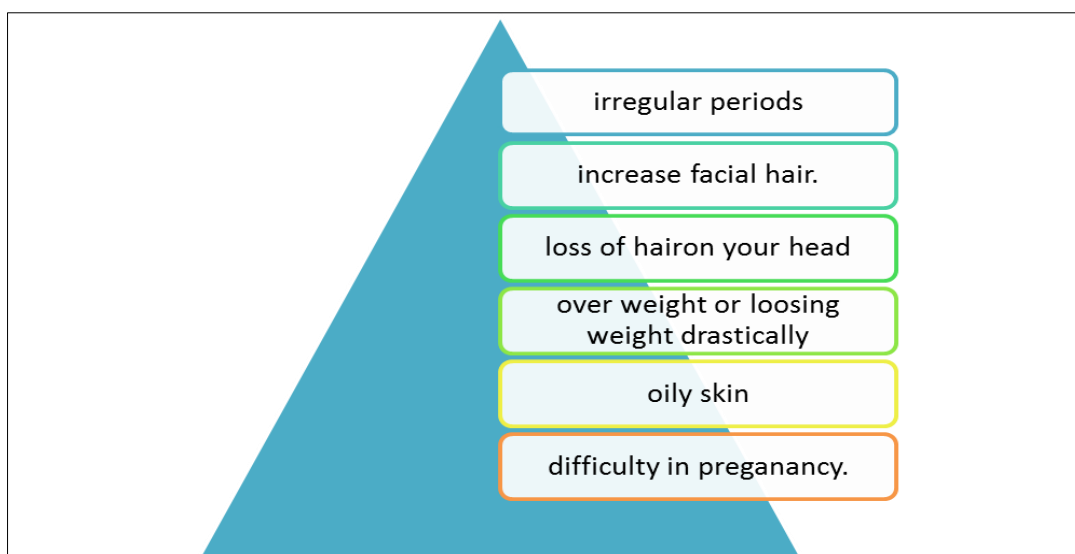


Fig 5

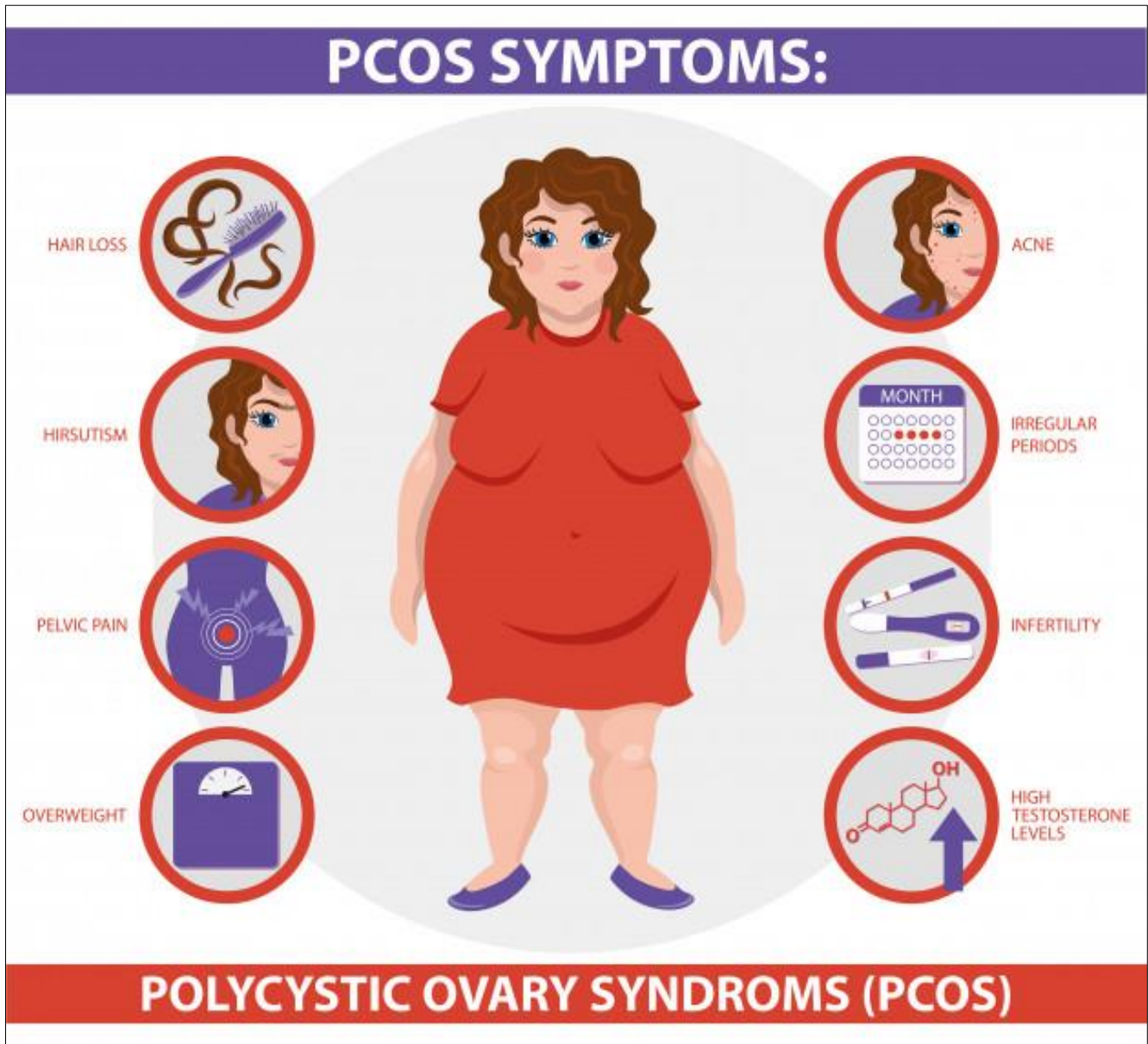


Fig 6

This are the main symptoms of PCOS. Obesity, hirsutism, (22) loss of hair, reduce fertility are the same symptoms seen in PCOD also. PCOS is associated with infrequent production of eggs which is known as ovulation.

**When Is a Women Said To Have PCOS?**

Now here the important step comes in seen, PCOS don't have specific cause hence on the observation of symptoms physicians have to Diagnosed the condition.

**PCOS = Polycystic Ovaries Scan + Symptoms**

- Irregular periods or no periods.
- Increase male characteristics growth hairs on face and severe hair loss.
- In sonography technique polycystic ovaries are seen.
- Difficulty in ovulation because of that its difficulty in pregnancy.

PCOS has long term consequences, to avoid them women have to upgrade in few lifestyle activites so it can be good and avoid this consequences [23].

**Adopt a healthy lifestyle**

Eating healthy and balanced diet. Intake some fibrous food in daily routine and most important maintain body water level by natural sources like fruits [24].

**By maintaining healthy routine**

Womens need to improve their sleeping pattern, daily exercise and organize their work for live stress [25]

- Have regular checkup by physician once PCOS is dignosed it can be affected body by other diseases like,
- High blood pressure.
- Depression
- Anxiety
- Hormonal problems like thyroid.
- Cancer of the womb
- Diabetes mellitus (above 40 years womens are prone to this condition)

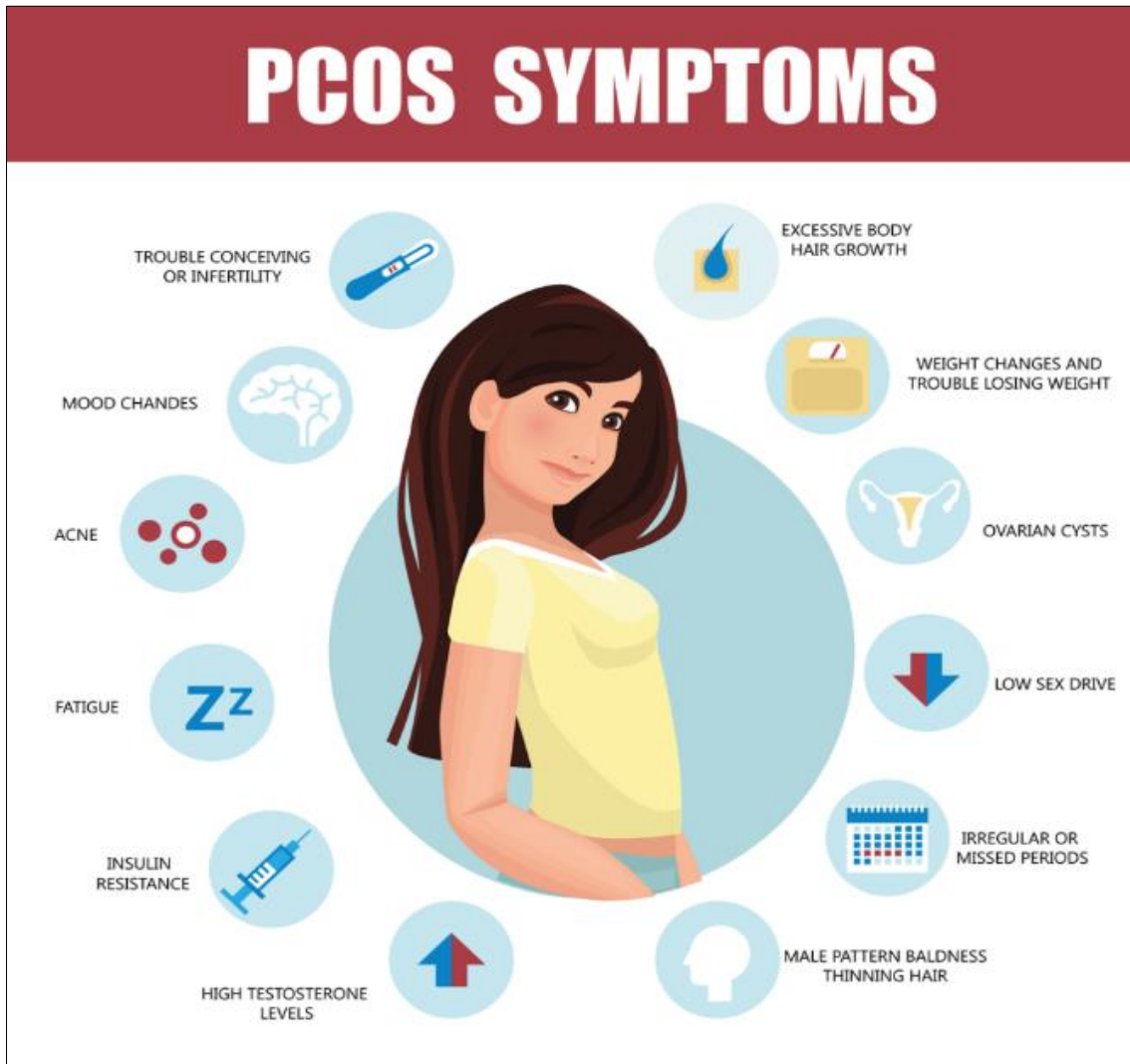


Fig 7

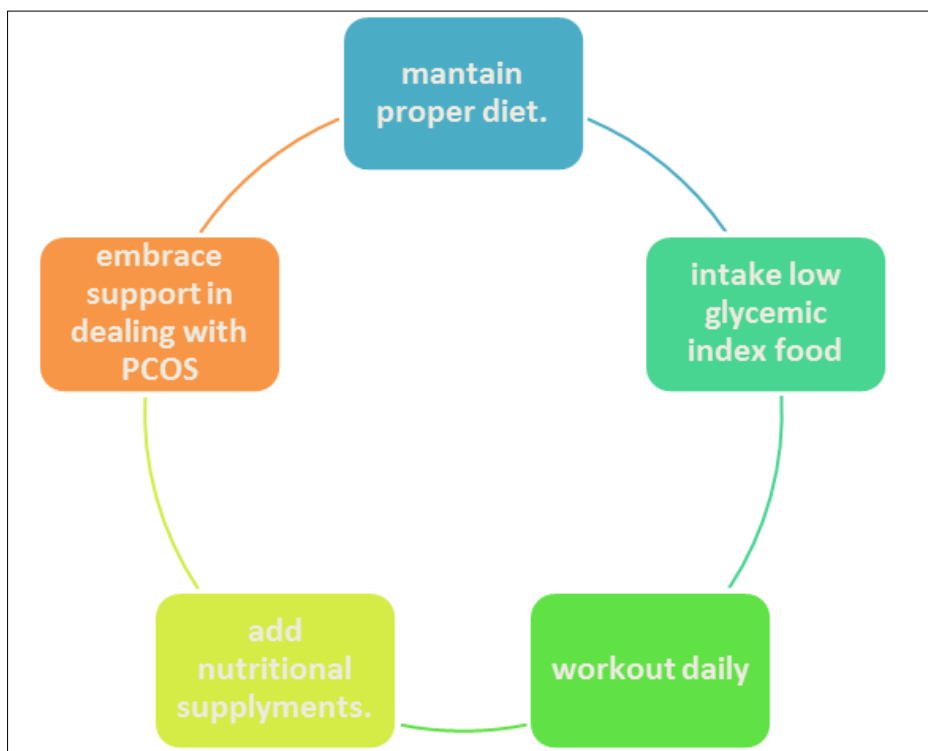


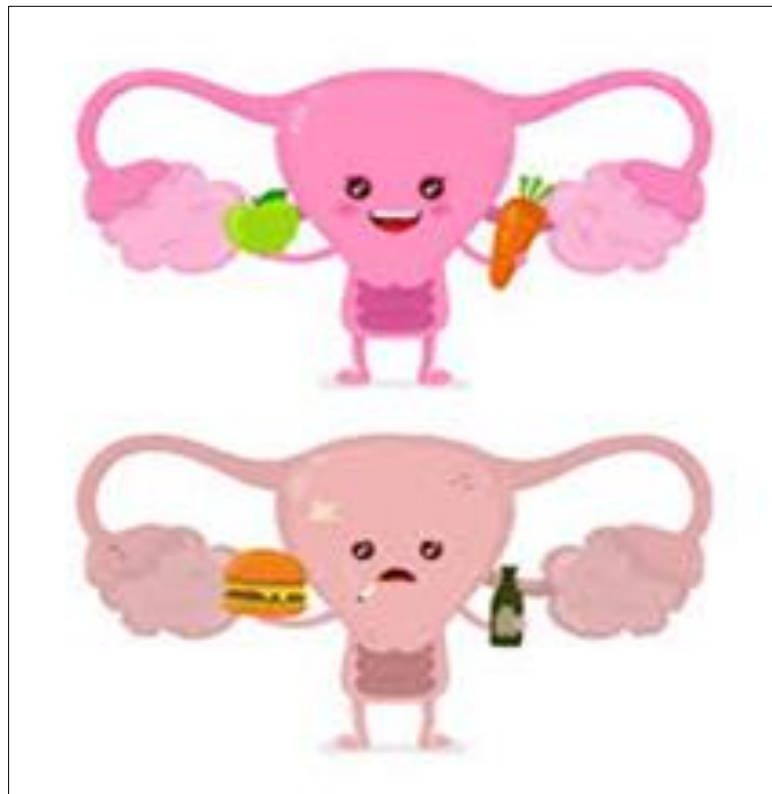
Fig 8

**What is PCOD?**

POLY CYSTIC OVARIAN DISEASE is the disease condition related to the ovaries. Most commonly women in the age 12 to 45 years get affected. When hormonal balanced get disturbed women undergoes some internal changes that affected to the ovaries internally by forming the cyst over the ovaries and further consequences. it causes some menstrual cycle disturbance and because of that its affect on her fertility. If it Cant controlled it can be affected by other major consequences. Like diabetes, cancer and hypertension. [26] Normally ovaries make female sex hormones and very minute amount of male hormones like androgen which will help to regulate the development of eggs during each menstrual cycle. This syndrome affects the hormones and

imbalanced the hormonal level.due to this ovaries stated producing the male hormones and due to this womens stopped ovulating. Because of the male hormone secretion increases womens undergoes the generation of male characteristics like facial hair growth, base in voice, hair loss etc. [27] Follicles are the sac inside the ovaries contain eggs. Normally one or two eggs are releases during each menstrual cycle which is called ovulation. In this condition the eggs in follicles do not mature enough and stop release and because of that formation of cyst inside the lining of ovaries start [28]. Those cyst progressively affect the internal damage to the body and losses the fertility.

**Symptoms of PCOD**

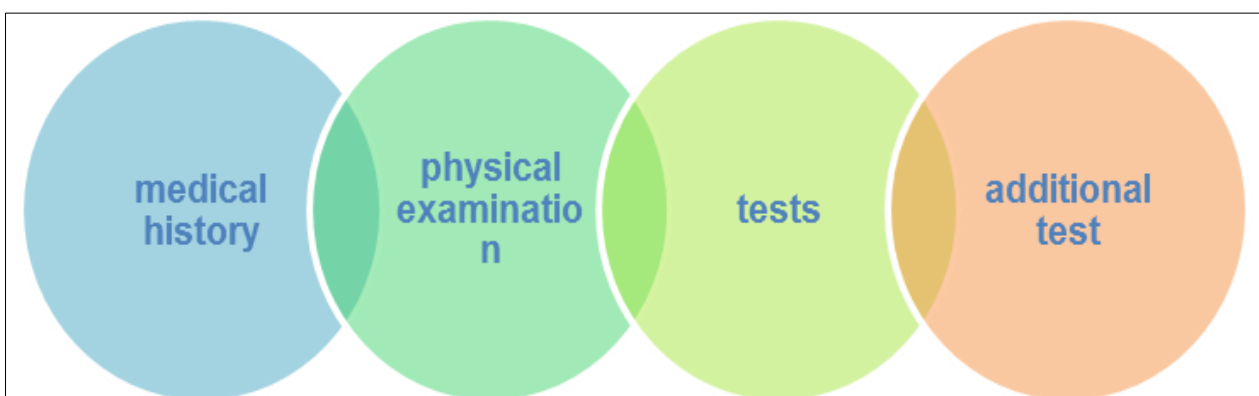


**Fig 9**

PCOD has the common symptoms like PCOS such as --

- Weight gain and trouble losing weight.
- Extra hairs on face and body.
- Acne.
- Thinning hair on scalp.
- Irregular periods.
- Fertility problem.
- Depression.

**Diagnostic characteristics of PCOD**



**Fig 10**

**Medical history**

Genetic factor is the important factor which affect most commonly.

1. Irregular periods
2. Signs of high level of androgens
3. Higher blood levels of androgen
4. Poly cystic ovaries,

**Physical examination**

By physical examination of pelvic reproductive organs masses growth or other abnormalities [29].

**Tests**

Blood test, glucose tolerance cholesterol level, triglyceride levels etc. [30]

**Imaging**

By the help of ultra sound imaging check the appearance of ovaries and thickness of uterus lining [31].

**Additional test**

1. Screening for depression and anxiety.
2. Screening for obstructive sleep Aponea [32].

**What are the possible complications of PCOS and PSOD?**

There are some complications of this condition if it diagnosed to late

- Infertility to women.
- Uterine bleeding.
- Depression and eating disorders.
- Endometrial cancer.
- Premature birth (miscarriage)
- Sleep aponea.

**How Can PCOS affects the pregnancy?**

Womens with PCOD and PCOS having the problem during the pregnancy because of the following reason-

- Increased indication for cesarean section [33].
- Gestational diabetes [34].
- Miscarriage [35].
- Ovulation test may not be accurate.
- Preeclampsia [36].

**How It Can Be Avoided**

- Achieving healthy weight before pregnancy.
- Increase body iron level.
- Achieving normal blood level.

**Treatment on PCOD and PCOS**

PCOD and PCOS are the conditions where ovaries get affected. on the ovary development of small cyst which is not a serious case or harmful condition but ignorance on that may leads to some serious consequences. Those cyst formation increases the hormone production particularly androgen which leads to generation of male characteristics [37].

In this condition symptoms varies from person to person. Symptoms are life threatening but it can be unwanted and inconvenient some people looking for ayurvedic treatment. Prevention of this condition is always better than the cure because through PCOS is treatable it has tendency to recur in patient [38].

**Exercise regularly**

Daily exercise helpful for this condition increase the exercise gradually so it avoid the stressful activity one of the problem that PCOS patients suffering they having the trouble in gaining the weight.

Exercise specially, focus on lower abdomen exercises which will hwlp to remove belly fat.

**Maintain a healthy diet**

A healthy and time to time intake of the meals improve the good life style and preventing the symptoms of PCOS

1. Don't take sweet and fried food or junk food in daily basis once in a while its okay to have it.
2. Eat frequent small meals rather than having large meal once in day.
3. Breakfast is most important meal for the daily lifestyle.
4. Add more fibrous food in the meal
5. Avoid dairy products like cheese, butter, etc.

**Maintain stable ovulation cycle**

PCOS has the problem with the ovaries and affect the menstrual cycle. Making Periods irregular and pregnancy difficult. a stable ovulation cycle is important to maintain the PCOS condition , sometimes womens take pills to postpone the menstrual cycle this should be minimized and decrease the intake of this medicines [39].

**Eat special diets**

Diet is the key role in any medical condition. PCOS condition patient have to follow some special diet such as

- Eat bitter gourd vegetables or drink its juice which will help to control blood sugar level AMLA is the fruit has the same effect to control the sugar.
- Leaves like tulsi and basil will help to maintain insulin level.
- A tablespoon of honey mixed with lemon and water helps to reduce weight.

**Keep your body and mind stress free-**

1. Daily exercises improve the mental condition of patient. Daily yoga and pranayamas exercise like surya- namskar and meditation improve the stressed condition.
2. Daily exercise helps to burn the fat which will ultimately improves the internal environment.
3. Spending time with your friends and family which will help to live stressed free.
4. Think positively in every situation will help to improve lifestyle.



Fig 10

### Conclusion

Ovaries are the important organ in the reproductive system in female. Affect occur to the ovaries can be lead to harmful for internal environment of body. PCOD and PCOS are the two very different medical conditions on which not every aware of this condition. Awareness of this two different medical conditions and diagnosed of this disease are very much important in the earlier stage of disease. Many times ignorance of abdomen pain and inflammation occur to the uterine bladder may lead to the severity of the disease.

This two conditions can be controllable if we diagnosed in earlier stage. Proper treatment and some changes in daily routine will be helpful to overcome this medical conditions. Awareness is must important apart from this proper counseling is needed for recovery of this disease. Proper diet and some daily exercise will be helpful to the womens for their healthy life style.

### Reference

1. Menstrual Cycle: Basic Biology Shannon M. Hawkins<sup>1</sup> and Martin M. Matzuk Ann N Y Acad Sci,2008:1135:10-18.
2. Menstrual Cycle Length and Patterns in a Global Cohort of Women Using a Mobile Phone App: Retrospective Cohort Study Jessica A Grieger, BSc, PhD and Robert J Norman J Med Internet Res,2020:22(6):e17109. Published online 2020 Jun 24. doi: 10.2196/17109
3. Menstrual characteristics and prevalence of dysmenorrhea in college going girls MoolRaj Kural,<sup>1</sup>Naziya Nagori Noor,<sup>1</sup>Deepa Pandit, J Family Med Prim Care.2015:4(3):426–431.
4. Menstrual cycle, pregnancy and oral contraceptive use alter attraction to apparent health in faces B. C. Jones,<sup>1,\*†</sup>D. I. Perrett,<sup>1</sup>A. C. Little, Proc Biol Sci,2005:22:272(1561):347-354.
5. Mechanisms of action of estrogen and progesterone Francesco J DeMayo<sup>1</sup>, Bihong Zhao, Ann N Y Acad Sci,2002:955:48-59; discussion 86-8, 396-406.
6. Endometrial thickness as a predictor of the reproductive outcomes in fresh and frozen embryo transfer cycles A retrospective cohort study of 1512 IVF cycles with morphologically good-quality blastocyst Tao Zhang, MMed, Zhou Li, PhD, Xinling Ren, Medicine (Baltimore),2018:97(4):e9689. Published online 2018 Jan 26.
7. Polycystic Ovary Syndrome A Review of Treatment Options With a Focus on Pharmacological Approaches Uche Anadu Ndefo, PharmD, BCPS, Angie Eaton, PharmD P T,2013:38(6):336-338, 348, 355.
8. Chronic Hormonal Imbalance and Adipose Redistribution Is Associated with Hypothalamic Neuropathology following Blast Exposure Pamela J. VandeVord, <sup>1</sup>Venkata Siva Sai Sujith Sajja J Neurotrauma,2016:1:33(1):82-88.
9. Fertility and age Korula George and Mohan S Kamath J Hum Reprod Sci,2010:3(3):121-123.
10. Polycystic Ovary Syndrome Christopher R. McCartney, M.D. and John C. Marshall, N Engl J Med. Author manuscript; available in PMC 2017 Feb 10. *Published in final edited form as:* N Engl J Med,2016:7:375(1):54-64.
11. Poly Cystic Ovarian Syndrome: An Updated Overview Samer El Hayek,<sup>1,†</sup>Lynn Bitar, Front Physiol. 2016; 7: 124. Published online, 2016.
12. Polycystic Ovary Syndrome: Pathophysiology, Presentation, and Treatment With Emphasis on Adolescent Girls Selma Feldman Witchel,<sup>1</sup> Sharon E Oberfield, J Endocr Soc,2019:1:3(8):1545-1573. Published online 2019 Jun 14
13. Recent advances in the understanding and management of polycystic ovary syndrome By Rosana C.



- Azevedo, Version 1. F1000Res. 2019; 8: F1000 Faculty Rev-565. Published online, 2019.
14. Detection of ovulation, a review of currently available methods Hsiu-Wei Su,<sup>1,†</sup> Yu-Chiao Yi, *Bioeng Transl Med*, 2017;2(3):238-246. Published online 2017 May 16
  15. A Review of Weight Control Strategies and Their Effects on the Regulation of Hormonal Balance Neil A. Schwarz, B. Rhett Rigby, *J Nutr Metab*. 2011: 237932. Published online 2011 Jul 28
  16. Menstrual cycle hormone changes associated with reproductive aging and how they may relate to symptoms Amanda Allshouse, MS,<sup>1</sup> Jelena Pavlovic *Obstet Gynecol Clin North Am*. 2018 Dec; 45(4): 613–628. Published online, 2018.
  17. Structure of ovaries and oogenesis in dermapterans. II. The nurse cells, nuage aggregates and sponge bodies Waław Tworzydło<sup>1</sup>, Elzbieta Kisiel *Folia Biol (Krakow)*, 2010;58(1-2):67-72.
  18. Activation of dormant ovarian follicles to generate mature eggs Jing Li,<sup>a</sup> Kazuhiro Kawamura *Proc Natl Acad Sci U S A*, 2010;117(22):10280–10284. Published online 2010 May 17
  19. Female Reproductive Decline Is Determined by Remaining Ovarian Reserve and Age Pawel Wilkosz,<sup>1,2</sup> Gareth D. Greggains, *PLoS One*, 2014;9(10):e108343. Published online 2014 Oct 13.
  20. Awareness of polycystic ovary syndrome among obstetrician-gynecologists and endocrinologists in Northern Europe Terhi T. Piltonen *PLoS One*, 2019;14(12): e0226074. Published online 2019 Dec 26
  21. Menopausal Symptoms and Their Management Nanette Santoro, MD,<sup>a,\*</sup> C. Neill Epperson, MD, *Endocrinol Metab Clin North Am*, 2015;44(3):497-515.
  22. HIRSUTISM: EVALUATION AND TREATMENTSilonie Sachdeva *Indian J Dermatol*, 2010;55(1):3-7.
  23. Long term health consequences of polycystic ovarian syndrome: a review analysis A Daniilidis and K Dinas *Hippokratia*, 2009;13(2):90-92.
  24. Defining a Healthy Diet: Evidence for the Role of Contemporary Dietary Patterns in Health and Disease Hellas Cena<sup>1,2,\*</sup> and Philip C. Calder<sup>3</sup> *Nutrients*, 2020;12(2):334.
  25. The Importance of Creating Habits and Routine Katherine R. Arlinghaus *Am J Lifestyle Med*, 2019;13(2):142–144.
  26. Association between polycystic ovarian syndrome and endometrial, ovarian, and breast cancer Dah-Ching Ding, MD, PhD,<sup>a,b,\*</sup> Weishan Chen, PhD *Medicine (Baltimore)*, 2018;97(39):e12608. Published online 2018 Sep 28.
  27. Evaluation and Treatment of Polycystic Ovary Syndrome Richard S Legro, M.D Feingold KR, Anawalt B, Boyce A, *et al.*, editors. South Dartmouth (MA): MDText.com, Inc, 2000.
  28. Polycystic Ovarian Disease Lorena I. Rasquin Leon; Jane V. Mayrin. Treasure Island (FL): StatPearls Publishing, 2021.
  29. Polycystic Ovary Syndrome: Clinical Presentation In Normal-Weight Compared With Overweight Adolescents Shilpa S. McManus, MD, MPH, Lynne L. Levitsky *Endocr Pract*, 2013;19(3):471-478.
  30. Diagnosis and Management of Polycystic Ovary Syndrome in Adolescent Girls Erin Lanzo, BA, MA, MS I, Maria Monge, *Pediatr Ann*, 2015;44(9):e223-e230.
  33. Ultrasound criteria in the diagnosis of polycystic ovary syndrome (PCOS) W U Atiomo<sup>1</sup>, S Pearson, S Shaw, A Prentice, P Dubbins *Ultrasound Med Biol*, 2000;26(6):977-80.
  34. Obstructive Sleep Apnea Jennifer M. Slowik; Jacob F. Collen. Treasure Island (FL): Stat Pearls Publishing, 2021.
  35. Cesarean Section Sharon Sung; Heba Mahdy. Treasure Island (FL): Stat Pearls Publishing, 2021.
  36. Gestational diabetes mellitus Eman M. Alfadhli, MD, *FRCP Saudi Med J*, 2015;36(4):399-406.
  37. Miscarriage Carla Dugas; Valori H. Slane. Treasure Island (FL): Stat Pearls Publishing, 2021.
  38. Pre-eclampsia: pathophysiology, diagnosis, and management Jennifer Uzan,<sup>1</sup> Marie Carbonnel, *Vasc Health Risk Manag*, 2011;7:467-474.
  39. Biological, psychological, and social characteristics of men with different smoking habits. C D Jenkins, S J Zyzanski, *Health Serv Rep*, 1973;88(9):834-843.
  40. Diagnosis and Treatment of Polycystic Ovary Syndrome: An Endocrine Society Clinical Practice Guideline Richard S. Legro, Silva A. Arslanian, *J Clin Endocrinol Metab*, 2013;98(12):4565-4592.
  41. Therapeutic Effects and Mechanisms of Herbal Medicines for Treating Polycystic Ovary Syndrome: A Review Chan-Young Kwon,<sup>1</sup> Ik-Hyun Cho, *Front Pharmacol*, 2020;11:1192.