

# **NOOGLE (NOGS ka Google)**

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**PolyCystic Ovary Syndrome (PCOS)**

**NOGS 20-21 & AMOGS PAC INITIATIVE**

**VOLUME - 9**



# **NOOGLE**

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## **THE TEAM**



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## **COMPILED BY**



**Dr. Rachita Pahukar**



**Dear Members,**

**It gives me immense pleasure to hand over the ninth volume of Patient's Information handouts which is going to be monthly feature. The ninth volume focuses on "PolyCystic Ovary Syndrome (PCOS)"**

**In recent years, patients have increasingly requested the opportunity to participate fully in their medical care. An important part of responding to this is providing educational handouts that inform patients about health problems, describe medical treatments, and promote healthy behaviors. They are useful extension of spoken communications and are also an extension of medical care. Spoken messages are forgotten quickly and so they need to be reinforced with the informative handouts. Educational handouts are an important part of the communication patients receive from health care providers.**

**This is our small effort to provide our members with these ready handouts for better communication with their patients. The member can print and use them for their patients benefit. We hope that you will find them useful.**

**I wish to profusely thank the ever enthusiastic, ever ready NOGS Member Dr. Rachita Pahukar for toiling very hard and putting it up together within a very short span of time. We deeply appreciate her super effort.**

**Wishing you all a very healthy patient interaction.**

**Sincerely,**

**Dr. Vaidehi Marathe**

**President NOGS 2020-21**

**Chairperson PAC AMOGS**



## Message from the President AMOGS...



**Hello everyone,**

**The theme of AMOGS this year is "We for Stree". I would like to thank every AMOGSian who has helped making every woman Safer, Stronger, and Smarter.**

**I would like to congratulate Dr. Vaidehi Marathe and Team NOGS for this Patient education booklet. I would also like to thank the contributors and the editorial team for their contributions towards this great booklet.**

**The aim of this booklet is to ensure that you are able to get basic knowledge regarding different areas of women health care. I hope this booklet helps you achieve that and clears all your doubts.**

**Dr. Nandita Palshetkar  
President  
AMOGS.**





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# What is PCOS?

- Polycystic ovary/ovarian syndrome (PCOS) is a set of symptoms related to an imbalance of hormones that can affect women and girls of reproductive age.
- Around 75% of women of reproductive age can have polycystic ovaries on ultrasound
- The hormonal imbalance creates problems in the ovaries. The ovaries make the egg that is released each month as part of a healthy menstrual cycle.
- With PCOS, the egg may not develop as it should or it may not be released during ovulation as it should be.

# Why does it occur and who gets PCOS?

- The cause of PCOS is not yet known but it often runs in families.
- It is believed to be linked to both lifestyle factors and genetics.
- If any of your relatives (mother, aunts, sisters) are affected with PCOS, your risk of developing PCOS may be increased.

The symptoms are related to abnormal hormone levels:

- Testosterone is a hormone that is produced in small amounts by the ovaries is slightly higher than normal and this is associated with many of the symptoms.
- Insulin is a hormone that controls the level of glucose (a type of sugar) in the blood. If you have PCOS, your body may not respond to insulin (this is known as insulin resistance), so the level of glucose is higher. High levels of insulin can lead to weight gain, irregular periods and fertility problems.

# What are the Symptoms & Signs of PCOS

- Difficulty in becoming pregnant (because of lack of ovulation)
- Ultrasound appearance of ovarian cysts (polycystic ovaries)
- Periods that are absent (amenorrhoea) or infrequent (oligomenorrhoea)
- Excess male hormones, causing symptoms such as hairiness (hirsutism) or acne
- Weight gain and an increase in fat, especially around the abdomen or tummy area
- Prediabetes or diabetes
- Abnormal blood fats (lipids, such as cholesterol and triglycerides)
- One of the most upsetting and frustrating symptoms of PCOS is **infertility**,
- However, this doesn't mean you won't become pregnant.
- There are many ways to manage infertility and a large percentage of women conceive after treatment.



# Your menstrual cycle and PCOS

## Menstrual Disorders



Amenorrhea



Oligomenorrhea



Menorrhagia

Menstrual disorders may vary, from complete absence of menstruation (amenorrhea) to menstruation delayed to 35 days or more (oligomenorrhea) to heavy bleeding (menorrhagia). Women with irregular menstrual periods have a 91% chance of having PCOS.<sup>11</sup> Those with PCOS are 15 times more likely to report infertility.<sup>12</sup>

# Health Implications

## PCOS Affects Many Areas of a Woman's Life

Psychological  
anxiety, depression

Dermatological  
hirsutism, acne

Metabolic  
obesity, metabolic  
syndrome, insulin  
resistance, type 2  
diabetes

Sleep  
disordered sleep,  
sleep apnea

Reproductive  
infertility,  
preeclampsia,  
miscarriage

# Across the lifespan

## Adolescence



Diagnosing PCOS in adolescents is difficult because PCOS and puberty have similar features. These include irregular menstrual cycles and acne. For an accurate diagnosis, adolescents should have all three elements of the Rotterdam criteria for PCOS. Hyperandrogenemia is the main marker for PCOS in adolescents.<sup>7</sup> Oligomenorrhea or amenorrhea should be present for at least 2 years after the first period. Forty percent of adolescents with menstrual irregularity have polycystic ovaries.

## Reproductive age



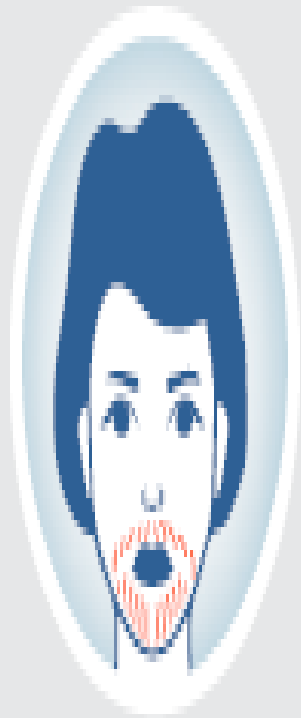
Fertility issues and hirsutism are the primary issues for women at reproductive ages. Infertility is caused by high levels of androgen and luteinizing hormones, which can lead to irregular menstrual cycles and anovulation, which is an absence of ovulation during a menstrual cycle.<sup>24</sup> Women with PCOS have three to four times the rate of pregnancy-induced hypertension and preeclampsia.<sup>24</sup> There is also a significantly increased risk of endometrial cancer in women with PCOS.<sup>25</sup>

## Late reproductive to menopausal age

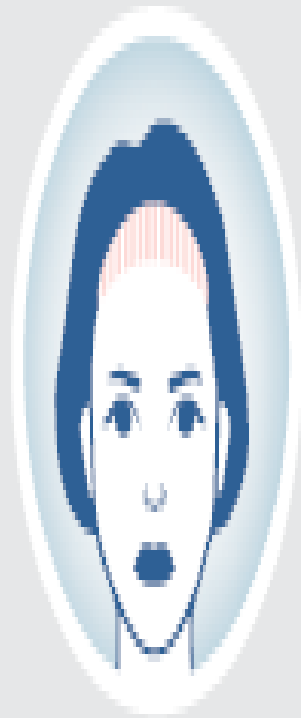


In addition to endometrial cancer, women over 54 years of age with PCOS were found to have a significant risk of ovarian cancer, though the risk for breast cancer is not significantly increased by having PCOS.<sup>25</sup> Older women with PCOS have a fourfold to sixfold increase of diabetes compared with women without PCOS.<sup>7</sup> Older women with PCOS also have more severe hirsutism, in addition to an increased number of metabolic and cardiovascular risk factors.<sup>26</sup>

## Dermatological Features



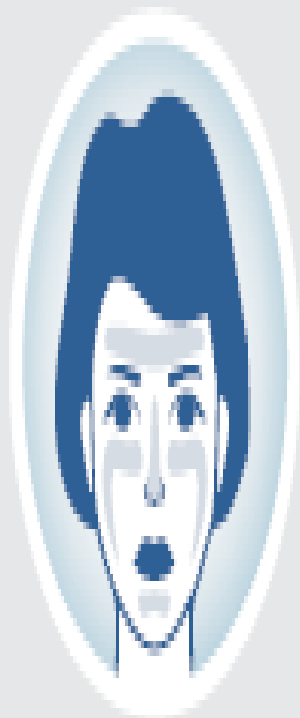
Hirsutism



Balding



Acne



Oily skin



Skin discoloration  
(acanthosis nigricans)

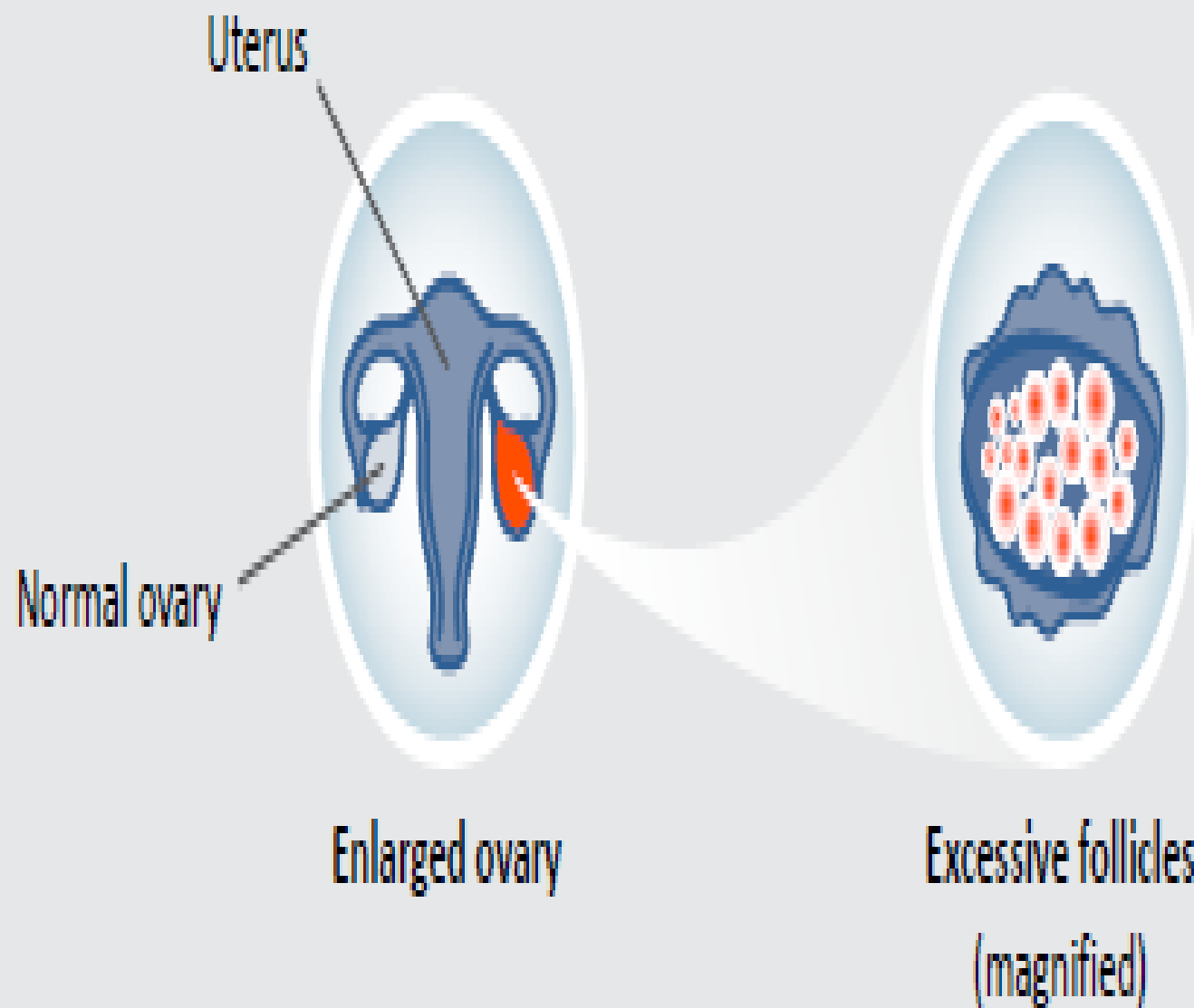
High levels of androgens typically lead to various dermatological symptoms.<sup>9,10</sup> These include hirsutism (coarse and dark hair on the body areas where men typically grow hair—e.g., the face, abdomen, chest, and back), acne, and balding/alopecia. In adolescents, some of the dermatological symptoms may be caused by puberty rather than PCOS.

# How is PCOS diagnosed?

- There is no one definitive test that can diagnose PCOS. The diagnosis of PCOS is a clinical diagnosis, meaning the diagnosis is made by your medical history and not any specific blood test.
- Three criteria determine if you have PCOS.
  - Irregular menstrual cycles since puberty (when not on hormones),
  - signs of androgen excess (excessive hair growth, acne or an elevated blood testosterone level)
  - PCOS appearing ovaries by ultrasound.
- To have the diagnosis of PCOS you need to meet 2 of the 3 above mentioned criteria.

# Ultrasound diagnosis

## Polycystic Ovaries



Excessive follicles, which is defined as 25 or more follicles that are 2 mm to 10 mm in a single view of a transvaginal ultrasound, may be present in PCOS. Additionally, increased ovarian volume, an ovary that is more than 10 mL, may be present.

# Are Weight problems associated with PCOS?

- Women who are overweight are more inclined to develop PCOS symptoms than women of a healthier weight range.
- Up to 10% of women in a healthy weight range have PCOS which increases to up to 30% of overweight women who have PCOS.
- Weight loss in women with a BMI (body mass index) greater than 25 often causes ovulation to resume spontaneously. A healthier lifestyle also promotes a positive self-esteem and has other physical and psychological benefits.
- Loosing weight by healthy eating and regular exercise (40 minutes, three times a week) is recommended

# What are long-term effects of PCOS?

Women experiencing symptoms should talk to their doctor about how to minimise any long-term effects. you may be at risk of developing the following:

- **Diabetes** – Since most women with the condition are insulin resistant, this means that many have an increased risk of developing pre-diabetes or type 2 diabetes.
- **Complications in pregnancy, i.e gestational diabetes** – Women with PCOS who become pregnant are more likely to develop diabetes during pregnancy.
- **Cardio-vascular disease** – There is a potential for an elevated risk of heart disease and high blood pressure, which is further increased if women are overweight, no increase in risk of dying from heart disease
- **Metabolic syndrome** – This cluster of illnesses can occur with Pcos. it includes impaired glucose intolerance, which is closely related to type 2 diabetes. it also includes obesity and high blood cholesterol.
- **Endometrial cancer** – this cancer is three times more common in women with Pcos. When women experience few or no periods, the endometrium or lining of the uterus can thicken and develop cancerous cells. risks can be reduced by taking the oral contraceptive pill and by maintaining a healthy body weight.



# What Are The Treatment Goals In Managing PCOS?

1. Reduce hyperandrogenic characteristics
2. Manage metabolic dysfunction and decrease risk factors (obesity) for cardiovascular disease and diabetes
3. Contraception for women not trying to conceive
4. Prevent Endometrial hyperplasia and cancer
5. Ovulation induction for those trying to conceive

Must account for patient preferences

Treatment may result change in features they consider important

# How do you treat PCOS?

Symptoms	Treatment
obesity, weight gain	Weight loss options include: <ul style="list-style-type: none"><li>•changes to diet</li><li>•exercise</li><li>•medications, i.e. orlistat (Xenical®)</li><li>•surgery, i.e. gastric bypass, lap-band</li></ul>
Hirsutism (hairiness)	<ul style="list-style-type: none"><li>•medications, i.e. insulin lowering agents, such as metformin, oral contraceptive pill, anti-androgens</li><li>•cosmetic treatments, i.e. waxing, bleaching, laser, electrolysis</li><li>•weight loss</li></ul>
acne	<ul style="list-style-type: none"><li>•topical creams</li><li>•medications, i.e. oral contraceptive pill, insulin lowering agents, such as metformin, anti-androgens</li></ul>
insulin resistance	<ul style="list-style-type: none"><li>•weight loss</li></ul>
diabetes	<ul style="list-style-type: none"><li>•changes to diet</li><li>•exercise</li><li>•medications, i.e. insulin lowering agents, such as metformin</li></ul>
infertility caused by irregular periods and ovulation	<ul style="list-style-type: none"><li>•weight loss</li><li>•medications, i.e. clomiphene citrate (Serophene®, Clomid®), insulin lowering agents, such as metformin, oral contraceptive pill –see page 16</li></ul>

# What are Hormonal therapies for PCOS?

## Oral contraceptive pill

how is it taken?: there is a wide range of oral contraceptive pills with differing doses of oestrogen and progesterone.

Side effects: Possible side effects include mood changes, weight gain or loss, bloating and breast tenderness. there is uncertainty whether oral contraception may increase insulin resistance and abnormal glucose tolerance (a sign of early diabetes).

## Clomiphene citrate

how is it taken?: clomiphene citrate comes in an oral tablet form and is usually taken daily for five days at the beginning of your cycle. it may be taken in conjunction with an insulin lowering agent called metformin

Side effects: side effects may include facial flushes, headaches, breast soreness, nausea and vomiting or abdominal discomfort and bloating

Success rate: clomiphene citrate stimulates ovulation in about 80% of women.

## Gonadotrophins

If clomiphene does not work, the next stage of treatment is usually to start administering a stronger category of medication called gonadotrophins – synthetic versions of FSH and hCG.

Where clomiphene citrate acts to stimulate the release of gonadotrophin-releasing hormone, gonadotrophins act directly on the ovary, promoting follicular development. The injection of high levels of FSH (and sometimes also LH) into your bloodstream stimulates your ovaries to develop multiple follicles and eggs. ideally no more than one to two eggs should develop to maturity.

# What if I have PCOS and am trying to get pregnant?

- Many women with PCOS have no trouble getting pregnant, while others do.
- Having PCOS is also associated with a higher risk of miscarriage.
- If you are trying to conceive and are not getting pregnant, you will have special considerations and questions to ask your doctor during a consultation.
- Talk to your doctor about treatments, including those for PCOS and specialized fertility treatments, monitoring before and after pregnancy, and medication use during pregnancy.
- Your doctor may recommend a medication or hormones to trigger ovulation.
- Some women with PCOS find that after being pregnant, their menstrual cycles become more regular.

# What is Laparoscopic ovarian drilling?

- When hormonal treatments have not been successful, a laparoscopic ovarian diathermy operation is recommended.
- It is a small procedure, done under a general anaesthetic.
- A laparoscopic needle is inserted into the pelvic area to view the ovaries, fallopian tubes and uterus.
- A series of small drill-holes or burns is made into each ovary, releasing male hormones stored in the cysts and temporarily restoring ovulation.
- About 70% of women will ovulate after this procedure, and ovulation is often restored for up to 6–12 months.

# How to cope emotionally with infertility in PCOS?

- PCOS can seriously affect your confidence and body image and you will have to cope with the emotions and frustrations of undergoing fertility treatment.
- Unable to become pregnant can often feel inferior, guilty and have problems with their self-image. It is an 'emotional roller coaster'
- Talking about your feelings, especially with your partner is vital to coping with the emotions associated with infertility treatment.
- If ever love and mutual understanding are called upon, it is in moments such as these.
- Communicating openly with friends and family can create a stronger sense of support in dealing with the psychological and emotional components of infertility.
- You can soften the emotional impact of infertility treatment by not expecting instant success.
- You will need to be patient and develop some coping methods for the frustrations & challenges ahead

# What are preventive measures to reduce risk factors?

- **Genetics:** If a close family member, such as a sister or mother, has the condition, you have an increased, but not guaranteed, chance of developing PCOS.
- **Diet:** it is best to limit exposure *to* advanced glycation end products *AGEs*. In contrast, foods that are low on the glycemic index—such as vegetables, fruits, whole grains, and milk—contain relatively few AGEs, even after cooking. Vitamin D supplements plays a roll in follicular development
- **Lifestyle:** Everyday habits and regular Exercise helps to reduce many PCOS symptoms, such as depression, inflammation, and excess weight. Also increase daily activity by taking the stairs, going on short walks, and stretching throughout the day.
- **Environmental exposure risks:** Limiting personal exposure to endocrine-disrupting chemicals may benefit reproductive health. Endocrine-disrupting chemicals may pose the greatest risk during prenatal and early postnatal development, when organ systems are developing.

# What Is Needed In Long-term Medical Follow-ups?

- It's important to follow up regularly with your doctor and make sure you take all medications prescribed to regulate your periods and lessen your chances of developing additional chronic diseases.
- Because women with PCOS have a higher chance of developing diabetes and having other health problems, your health care provider may suggest having a:
  - Blood sugar test once a year
  - Hemoglobin A1C test (a test that tells how high your blood sugar has been the past 2–3 months) once a year or a glucose tolerance test every few years
  - Vitamin D level test
  - Thyroid function test



# What Are Myths About PCOS?

## Is it true that pregnancy cures PCOS?

Unfortunately, no. However, it is quite common for a woman with PCOS to have a cessation of symptoms while she is pregnant, and many women have improvement and more normal menstrual cycles after having been pregnant.

## Will removing my ovaries cure my PCOS?

The hormonal irregularities will not be restored to normal levels just because your ovaries are removed. It is possible that removing your ovaries will lessen your symptoms, but this is an extreme approach that will not prove to be a cure.

## Can PCOS be treated with herbal supplements?

Some women with PCOS have found relief from their symptoms through alternative therapies, such as herbs, acupuncture, homeopathic remedies and other alternative approaches.

Herbal supplements are unregulated and may interact with prescription medications. Talk to your physician and naturopath if you are considering complementary alternative therapies.