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In This Issue...

- ▶ Polycystic Ovary Syndrome
- ▶ A Drug That Grows Eyelashes: For Real?

OTC Medicines Corner

Ginkgo biloba may improve cognitive function postacute ischemic stroke.....5

Test Your Knowledge .....5

Anti-Ulcer Formula.....6

DIC Real Enquiry .....6

EPVC Updates .....7



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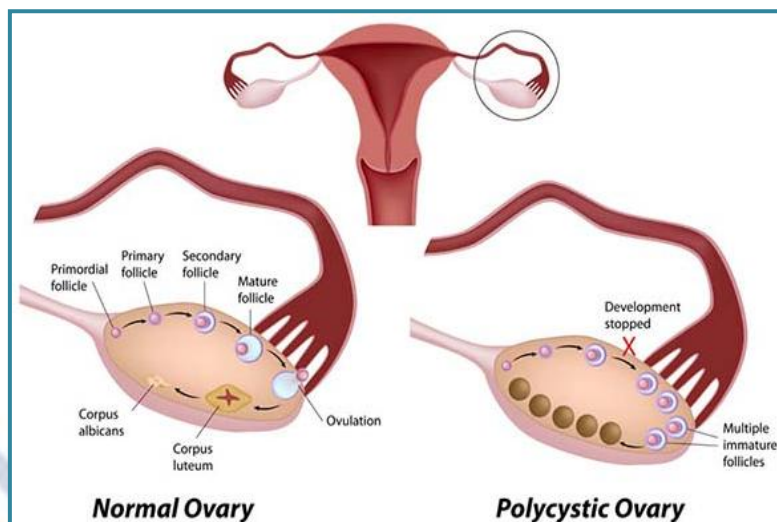
# Polycystic Ovary Syndrome (PCOS)

Polycystic ovary syndrome (PCOS) is a hormonal disorder common among women of reproductive age. Women with PCOS may have infrequent or prolonged menstrual periods or excess male hormone (androgen) levels. Polycystic ovaries contain a large number of harmless follicles (small collections of fluid) that are up to 8mm (approximately 0.3in) in size. The follicles are under-developed sacs in which eggs develop. In PCOS, these sacs are often unable to release an egg, which means that ovulation doesn't take place.

## Symptoms

Signs and symptoms of PCOS often develop around the time of the first menstrual period during puberty. Sometimes PCOS develops later, for example, in response to substantial weight gain. Signs and symptoms are typically more severe in obese women.

Signs and symptoms of PCOS vary. A diagnosis of PCOS is made when at least two of these signs are experienced:



- **Irregular periods.** Infrequent, irregular or prolonged menstrual cycles are the most common sign of PCOS. For example, you might have fewer than nine periods a year, more than 35 days between periods and abnormally heavy periods.
- **Excess androgen.** Elevated androgen levels may result in physical signs, such as hirsutism, and occasionally severe acne and male-pattern baldness.
- **Polycystic ovaries.** Ovaries might be enlarged and contain follicles that surround the eggs. As a result, the ovaries might fail to function regularly.

## Causes

The exact cause of PCOS isn't known. Factors that might play a role include:

- **Excess insulin.** Insulin is the hormone produced in the pancreas that allows cells to use sugar, body's primary energy supply. If cells become resistant to the action of insulin, then blood sugar levels can rise and the body might produce more insulin. Excess insulin might increase androgen production, causing difficulty with ovulation.
- **Low-grade inflammation.** Research has shown that women with PCOS have a type of low-grade inflammation that stimulates polycystic ovaries to produce androgens, which can lead to heart and blood vessel problems.
- **Heredity.** Research suggests that certain genes might be linked to PCOS.
- Raised levels of **androgen**, **luteinising hormone (LH)**, **prolactin** (only in some women with PCOS) and low levels of **sex hormone-binding globulin (SHBG)**.

## Diagnosis

There's no test to definitively diagnose PCOS. The doctor is likely to start with a discussion of medical history, including menstrual periods and weight changes. A physical exam will include checking for signs of hirsutism, insulin resistance and acne. The doctor might then recommend:

- **A pelvic exam.** Visual and manual inspection of reproductive organs for masses, growths or other abnormalities.

- **Blood tests.** Analysis of hormone levels. This testing can exclude possible causes of menstrual abnormalities or androgen excess that mimics PCOS. Additional blood testings include measuring glucose tolerance and fasting cholesterol and triglyceride levels.
- **An ultrasound.** Checking the appearance of ovaries and the thickness of the uterus lining.

If a diagnosis of PCOS is made, additional tests for complications might be recommended which can include:

- Periodic checks of blood pressure, glucose tolerance, and cholesterol and triglyceride levels
- Screening for depression and anxiety
- Screening for obstructive sleep apnea

## Treatment

Early diagnosis and treatment along with weight loss may reduce the risk of long-term complications such as type 2 diabetes and heart disease. PCOS treatment focuses on managing individual concerns, such as infertility, hirsutism, acne or obesity. Specific treatment might involve lifestyle changes or medication.

### Lifestyle changes

Weight loss through a low-calorie diet combined with moderate exercise activities may be recommended. Even a modest reduction weight — for example, losing 5 percent of body weight — might help. Losing weight may also increase the effectiveness of PCOS medications, and can help with infertility.

### Medications

- **Combination birth control pills.** Combined estrogen and progestin pills, skin patch, or vaginal ring decrease androgen production and regulate estrogen. Regulating hormones can lower the risk of endometrial cancer and correct abnormal bleeding, excess hair growth and acne.
- **Progestin therapy.** Taking progestin for 10 to 14 days every one to two months can regulate periods and protect against endometrial cancer. Progestin therapy doesn't improve androgen levels and won't prevent pregnancy. The progestin-only minipill or progestin-containing intrauterine device is a better choice if pregnancy is to be avoided.  
To help you ovulate, your doctor might recommend:
- **Clomiphene (Clomid).** This oral anti-estrogen medication is taken during the first part of the menstrual cycle.
- **Letrozole (Femara).** This breast cancer treatment can work to stimulate the ovaries.

## Ovarian Cysts and PCOS: NOT THE SAME!

**Ovarian cysts** and **PCOS** are related conditions with many of the same symptoms, meaning that women often confuse the two, or wrongly believe that they have PCOS when they do not.

The most significant difference between the two conditions is that **PCOS** results in a substantial **hormonal imbalance**, which is not generally the case with ovarian cysts. It is also possible for women to have **multiple ovarian cysts** without suffering from **PCOS**.

**Ovarian cysts** are sacs filled with fluid which are present in or on the ovaries. They are very common and as such, many women will develop them at some point in their lifetime.

Most **ovarian cysts** occur naturally as a result of the normal menstrual cycle (**functional cysts**) and during the childbearing years. Usually, these cysts are harmless and will disappear on their own without the need for medical attention.

**Ovarian cyst** symptoms are very similar to those found in women with **PCOS**, such as irregular or non-existent periods, acne and weight gain. Other **ovarian cyst** symptoms may include pelvic pain, high blood pressure, lower back pain, abdominal pressure and nausea.

It has been found that women with **ovarian cysts** usually do not have much difficulty getting pregnant, whereas it is common for those with **PCOS** to struggle.

- **Metformin (Glucophage, Fortamet, others).** This oral medication for type 2 diabetes improves insulin resistance and lowers insulin levels. If a woman doesn't become pregnant using clomiphene, the doctor might recommend adding metformin. Metformin can also slow the progression of prediabetes to type 2 diabetes and help with weight loss.
- **Gonadotropins.** These hormone medications are given by injection.

To reduce excessive hair growth, these medications could be recommended:

- **Birth control pills.** These pills decrease androgen production that can cause hirsutism.
- **Spironolactone (Aldactone).** Blocks the effects of androgen on the skin. Spironolactone can cause birth defects, so effective contraception is required while taking this medication.
- **Eflornithine (Vaniqa).** This cream can slow facial hair growth in women.
- **Electrolysis.** A tiny needle is inserted into each hair follicle. The needle emits a pulse of electric current to damage and eventually destroy the follicle. Multiple treatments may be required.

### Surgery

Surgical management of PCOS is aimed mainly at restoring ovulation. Various laparoscopic methods include electrocautery, laser drilling and, multiple biopsy.

### How does diet affect PCOS?

Foods to ADD	Foods to AVOID
<ol style="list-style-type: none"> <li>1. <b>High-fiber vegetables</b> can help combat insulin resistance by slowing down digestion and reducing the impact of sugar on the blood. Great options include broccoli, green and red peppers, beans and lentils, almonds, and sweet potatoes</li> <li>2. <b>Lean protein</b> sources like tofu, chicken, and fish don't provide fiber but are very filling and a healthy dietary option.</li> <li>3. <b>Anti-inflammatory foods and spices</b>, such as turmeric, tomatoes, spinach, almonds and walnuts, olive oil, fruits, such as blueberries and strawberries, fatty fish high in omega-3 fatty acids, such as salmon and sardines.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Foods high in refined carbohydrates</b>, cause inflammation, exacerbate insulin resistance, and should be avoided. These include highly processed foods, such as: white bread, muffins, breakfast pastries, sugary desserts, white potatoes, anything made with white flour.</li> <li>2. <b>Sugary</b> snacks and drinks including sucrose, high fructose corn syrup, and dextrose</li> <li>3. <b>Inflammatory foods</b>, such as fries, margarine, processed and red meats.</li> </ol>

### Other lifestyle changes to consider

PCOS, like many disorders, responds positively to proactive lifestyle choices. This includes exercise and daily physical movement. Both can help to reduce insulin resistance, especially when coupled with a limited intake of unhealthy carbohydrates. Many experts agree that at least 150 minutes per week of exercise is ideal.

Daily activity, low sugar intake, and a low-inflammation diet may also lead to weight loss. Women may experience improved ovulation with weight loss, so women who are obese or overweight and want to get pregnant may find physician-approved exercise especially important.

The symptoms associated with PCOS can cause stress. Stress reduction techniques, which help calm the mind, can help. These include yoga and meditation. Speaking with a therapist or other medical professional may also be beneficial.

**References:**

- 1) Mayo Clinic Staff. *Polycystic Ovarian Syndrome (PCOS)*. [Internet]; Aug 2017 [cited March 5 2018]. Available from: [www.mayoclinic.org/diseases-conditions/pcos/symptoms-causes/syc-20353439](http://www.mayoclinic.org/diseases-conditions/pcos/symptoms-causes/syc-20353439)
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## OTC Medicines Corner

### Ginkgo biloba may improve cognitive function postacute ischemic stroke

Administration of daily ginkgo biloba extract with aspirin to patients with an acute ischemic stroke resulted in better memory function, executive function, and neurological function compared with aspirin alone, according to results of a multicenter trial published in *Stroke and Vascular Neurology*.

**Source:** <http://www.aphanet.org/alternative-medicines-corner/ginkgo-biloba-may-improve-cognitive-function-postacute-ischemic-stroke>



1. For the following abbreviations:  
(A) HbA1c                      (B) BUN                      (C) TSH                      (D) LFT                      (E) MCV  
Select, from A to E, which one of the above:  
i. is carried out as part of kidney function monitoring  
ii. is carried out in thyroid function monitoring  
iii. is used to monitor diabetic patients
2. Which of the following clinical features is more common in Crohn's disease than in ulcerative colitis?  
(A) abnormal bowel movements                      (B) slow onset of disease  
(C) joint pain                      (D) fistula formation
3. What parenteral trace mineral therapy may be an effective adjunct if the insulin drip fails to achieve the glucose level goal?  
(A) 20-40 mg zinc/day                      (B) 150-200 µg chromium/ day  
(C) 0.5-1.5 mg copper /day                      (D) 150-400mcg manganese/day  
(E) 40-60 µg selenium/day

## Anti-ulcer Formula

**Uses:** Ulcers, Stomach Cramps, Intestinal Cramps, Stomachache

**Ingredients:**

1/2 tsp. powdered Calendula  
1/2 tsp. powdered Marshmallow root  
1/2 tsp. powdered Meadowsweet  
1/2 tsp. powdered Chamomile  
1/4 tsp. powdered Licorice root  
1/8 tsp. powdered Ginger root  
1/8 cup Aloe Vera juice  
2 cups water

Mix the powdered herbs together and place in a tea pot. Boil the water and pour over the herb mixture. Cover and allow to steep for 20 minutes. Strain the herbs and add the Aloe Vera juice to the beverage. Drink 3-4 cups of the tea a day.



## Real Enquiries

At the "Drug Information Center", we respond to enquiries from the professional healthteam as well as from others. Here's one of the enquiries received at the center:

**Enquiry received from:** S.Y.- Faculty of Pharmacy- Assiut University

**Enquiry:**

Can herpes labialis (cold sores) lead to lip vitiligo? Is there a connection or is it genetic, and could it be treated with topical tacrolimus?

**Summary of the answer:** There is evidence of the involvement of viruses including herpes simplex virus (HSV) in onset of mucosal vitiligo. Evidence also suggests that genetical factors are involved, and can be combined with other mechanisms. This is the reason why vitiligo is a multifactorial and polygenetic disease.



In some patients, herpes labialis induced isomorphic response can lead to lip vitiligo. This condition needs to be differentiated from recurrent herpes induced depigmentation occurring after attacks of herpes labialis on and around the lips with resulting depigmentation.

Ointments containing tacrolimus or pimecrolimus, drugs known as calcineurin inhibitors, can help with small patches of depigmentation. In early vitiligo, topical tacrolimus was found to be effective to some extent in lip vitiligo. Their effectiveness is considered to be higher when

combined with UVB or Excimer laser. Another advantage of the calcineurin inhibitors is that they are safe to use for long-term treatment compared to topical corticosteroids.

**References:** 1) Parsad D. Mucosal Vitiligo. In: Picardo M and Taieb A. *Vitiligo*. Berlin: Springer-Verlag. 2010  
2) Vitiligo: Symptoms, Causes & Treatment. [Internet]; April 2017 [cited Feb 13 2018]. Accessed at: <https://skinpractice.com/vitiligo-symptoms-causes-treatment>  
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## A Drug That Grows Eyelashes: For Real?

In 2008, the FDA approved the prescription drug bimatoprost (Latisse) for treating hypotrichosis (sparse eyelashes), and thus considers it safe and effective for this use. It is a liquid that's applied daily to the base of the upper eyelid. Still, it's hard to recommend a drug solely for such cosmetic purposes, since it does have side effects, and its long-term safety is largely unknown.



Bimatoprost is the same drug as the eye drops used to treat glaucoma, which were found to have the unexpected side effect of stimulating eyelash growth. According to the manufacturer, most people will grow longer, darker, and thicker eyelashes, with full effects seen by 16 weeks. If you stop using it, though, your eyelashes will return to their former state.

The potential side effects include red, itchy eyes and darkening of eyelid skin (usually reversible) and of the iris (likely permanent). In addition, if the medication repeatedly drips, hair can grow on the skin around the eyes. A rare side effect that made headlines is the chance that the drug could turn hazel or blue eyes permanently brown. The safety of the drug during pregnancy is unknown, and it should be used cautiously if you already use a similar medication for glaucoma.

**Source:** A Drug That Grows Eyelashes: For Real? [Internet]; Feb 2018 [cited March 4 2018]. Available from: [www.berkeleywellness.com/self-care/preventive-care/article/drug-grows-eyelashes-real](http://www.berkeleywellness.com/self-care/preventive-care/article/drug-grows-eyelashes-real)

## EPVC Updates Contraindicated use of "Trimebutine" in Children under 2 years old in Egypt: Risk of Serious Adverse Events

Based on the Egyptian Pharmacovigilance Center (EPVC) Committee recommendations on 04/01/2018 at CAPA (The Central Administration for Pharmaceutical Affairs), the Pharmacology Committee on 18/01/2018 has approved the following updates in the insert leaflets of the pharmaceutical products containing "Trimebutine" in Egypt as follows:

For dosage forms specific for children:

**Contraindications**  
Children under 2 years



For dosage forms specific for Adults:

**Warning :**

Not recommended for Children under 12 years

Trimebutine is a spasmolytic agent that regulates intestinal and colonic motility and relieves abdominal pain with antimuscarinic and weak mu-opioid agonist effects. It is used to restore normal bowel function and is commonly present in pharmaceutical mixtures as trimebutine maleate salt form.

Trimebutine containing products are now contraindicated in children under 2 years old, because of the low level of evidence of effectiveness in the child under 2 years and because of the risks of serious side effects, specially neurological (somnia, convulsions) and cardiac (bradycardia), particularly related to a risk of medication error and overdose. This was based on the French regulatory authority recommendations. It was recommended also that the indications are restricted to:

- Oral dosage forms: at the symptomatic treatment of pain, transit disorders and intestinal discomfort related to intestinal functional disorders.
- Injectable dosage forms: to the symptomatic treatment of pain, transit disorders, intestinal discomfort related to intestinal functional disorders when the use of the oral route is not possible.

Source: The Egyptian Pharmaceutical Vigilance Center Newsletter. 9 (2); Feb 2018.



**Answers:**

- (B)** BUN stands for blood urea nitrogen. It provides an indirect measure of renal function and glomerular filtration rate, and also gauges liver function. Urea is formed in the liver as an end-product of protein metabolism. Urea is transported to the kidneys for excretion. For kidney function monitoring it should not be used as a stand-alone test, because changes in the metabolic function of the liver could affect the BUN results. BUN is used together with creatinine levels in the monitoring of kidney function.
  - (C)** TSH stands for thyroid-stimulating hormone, and its concentrations are monitored in thyroid disease.
  - (A)** HbA1c, also referred to as glycosylated hemoglobin, is used to monitor diabetes. It measures the blood glucose bound to hemoglobin. As erythrocytes have a life span of 120 days, the test reflects the average blood sugar level in the 2–3 months preceding the test. It gives an indication of the blood glucose levels over the past 90 days.
- (D)** While the overlap of clinical presentation of these two diseases is substantial, fistula formation is extremely rare in ulcerative colitis.
- (B)** Suggested IV requirements of chromium for deficiency and severe glucose intolerance are 150-200 µg/ day.