

### Examples of anti-androgens:

- Spironolactone is commonly used to treat unwanted hair growth. It may cause ~~fatigue and~~ high levels of potassium in the blood at higher doses. Don't take potassium supplements if you are taking spironolactone or if you have kidney disease.
- Cyproterone acetate lowers the levels of androgens in the body. It is available alone or in combination with estrogen (~~Diane 35®~~). Side effects may include weight gain, tiredness, and headache. The tiredness usually goes away within 3 months of starting treatment. ~~Your doctor may want you to have a blood test before starting this drug, and periodically during treatment.~~

There are more types of anti-androgens. Your doctor may prescribe one of them if they are better suited to you.

**All anti-androgens are harmful to an unborn baby and should never be taken if you are pregnant. If you are sexually active, you must use a reliable form of birth control.**

### 4. Insulin sensitizers

Many girls with PCOS have higher than normal levels of insulin in their bodies. This higher level of insulin is needed to keep the level of sugar in the blood normal. This is called insulin resistance. When even the higher levels of insulin fail to keep the blood sugar normal, then type 2 diabetes develops. High levels of insulin also cause the ovaries to produce high levels of androgens.

Many doctors now treat girls with PCOS with insulin-sensitizing drugs. The most commonly used drug is *metformin*. It makes the body more sensitive to insulin and lowers the level of insulin in the body. Lower insulin levels result in lower levels of androgens. Many girls taking metformin alone can begin having regular periods.

After several months of treatment, metformin may help to control unwanted body hair. Studies have shown that metformin is most helpful in females who are overweight. It may be easier for you to lose weight if you are taking metformin.

Your doctor may want you to have blood tests once in a while taking metformin. Do not take it if you have liver or kidney problems. Possible side effects of metformin may include:

- upset stomach (nausea)
- diarrhea
- unpleasant metallic taste in the mouth

These side effects can be reduced by taking the drug with food and by starting at a low dose. Side effects often disappear after the first week.

Stop taking metformin if you are having surgery or x-ray procedures using certain contrast dyes. Your doctor can tell you when to stop and restart metformin.

**Metformin is not recommended during pregnancy. If you are sexually active, you must use a reliable form of birth control.**

Your doctor may choose one or a combination of treatments for your PCOS. The treatment your doctor recommends depends very much on the symptoms of PCOS that bother you the most. Be open and honest. **Your feelings are very important!**

health information

# Polycystic Ovary Syndrome (PCOS) in Adolescents

**Commented [d1]:** The doctor can tell them if he/she wants blood work.

**Formatted:** Bulleted + Level: 1 + Aligned at: 0 cm + Tab after: 0.63 cm + Indent at: 0.63 cm

## What is Polycystic Ovary Syndrome (PCOS)?

Teen girls with PCOS may have some or all of these symptoms:

- acne
- obesity
- light, irregular, or no menstrual periods
- unwanted coarse hair on face and/or body
- areas of darkened, velvety skin on the neck, under the arms, in the groin, and in other skin creases

~~It is believed that PCOS may start early in childhood.~~

PCOS is caused by an imbalance between several hormones (chemicals) in the body, which may become obvious in the teen years. Insulin (the hormone that helps the body use sugars from food) levels are high. This makes it easier for the body to deposit fat tissue, which may lead to weight gain. High insulin levels and extra weight both cause the levels of hormones called androgens to be high. **Girls normally make small amounts of androgens** during puberty. Androgens give girls underarm and pubic hair.

Complications of PCOS may include:

- type 2 diabetes
- heart disease
- trouble becoming pregnant
- cancer of the lining of the uterus (if no periods)

Though there is no cure for PCOS, there are many treatments to help control symptoms.

## How is PCOS diagnosed?

PCOS is diagnosed after the doctor takes a detailed history and doing a complete check-up. You may have a blood test done to check different hormone levels.

## How is PCOS treated?

### 1. Weight loss

About half of girls with PCOS are overweight. Weight gain causes insulin and androgen levels in the blood to be high. Even a **modest** weight loss in someone who is overweight can lower insulin and androgen levels and may make the periods regular. Your doctor may refer you to a dietitian who can recommend a healthy eating plan **combined** with increased physical activity to help you lose weight.

### 2. Birth Control Pills

Birth control pills contain the two hormones, estrogen and progesterone. Estrogen helps to decrease the amount of androgens produced by the ovaries. It can help control acne and unwanted body hair. Progesterone is needed to prepare the lining of the uterus before a menstrual period. It is important that this lining not be allowed to build up over several months, as this increases the risk of cancer of the lining of the uterus. Your doctor may prescribe progesterone alone to produce a period then place you on birth control pills to keep your periods regular.

You may notice the side effects **below**:

- tender breasts
- swelling of hands, legs or feet
- slight weight gain or loss
- bloated stomach
- mild headaches
- spotting or bleeding between periods
- feeling sick to your stomach

If they bother you, speak with your doctor or nurse. Your doctor may wait and see how your body adjusts to the hormones, or may change the pill to one that suits you better.

~~Some girls find it helps to take their pill with food or in the evening if it upsets their stomach.~~

The side effects below may be caused by blood clots. They are **rare** but serious. **Get emergency help right away if you have:**

- sudden, very bad headache
- vision changes
- slurred speech
- weakness/numbness in the arm or leg
- sharp pain in chest, groin, or leg
- sudden trouble breathing

If you forget to take a pill, follow the instructions in the package insert in your pill container.

If your doctor feels that the birth control pill is not right for you, progesterone alone may be prescribed. Your period should start a few days after stopping the progesterone.

### 3. Anti-androgens

Often the birth control pill alone is not enough to get rid of unwanted hair. Your doctor may suggest using cosmetic measures to remove or hide unwanted hair: shaving, waxing, depilatory creams, electrolysis, bleaching. If you are not happy with the results, your doctor may prescribe a medicine called an anti-androgen to lessen the effects of androgens in your body. These medicines can take 6 to 12 months to work.

**Commented [d6]:** This section not necessary at this time. S&S updated as per S&R Health's Birth Control Pill handout.

**Commented [d2]:** How much is modest?

**Commented [d3]:** There is a lot of information here that the girl doesn't have to know right now, like signs of a blood clot. When she starts the pill she will receive information from the pharmacy.

**Commented [d4]:** Updated as per S&R Health's Birth Control Pill patient handout.

**Commented [d5]:** Will be in the pharmacy handout.