

Patient information from the BMJ Group

# Polycystic ovary syndrome

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## Polycystic ovary syndrome

Polycystic ovary syndrome (PCOS) is a condition that affects women's hormones. It can cause you to have irregular periods, or even none at all. You may find it hard to get pregnant. PCOS can also cause unwanted hair growth and weight gain. But there are good treatments that can help.

We've brought together the best research about PCOS and weighed up the evidence about how to treat it. You can use our information to talk about with your doctor and decide which treatments are best for you.

## What is polycystic ovary syndrome?

If you're a woman with polycystic ovary syndrome (PCOS for short), some of your hormones will be out of balance. These hormones affect your menstrual cycle (your periods), your weight, and the way hair grows on your body.

You may find having PCOS upsetting. It can make it harder to have children. Some symptoms, like unwanted body hair, can be embarrassing. But you're not alone. Lots of women have this condition. And there are some good treatments that can help.

PCOS is also sometimes called **polycystic ovary disease**.

## Key points for women with polycystic ovary syndrome

- If you have PCOS you have problems with your hormones, particularly the ones that are made in your ovaries.
- You may have irregular periods, or even none at all. You may also get unwanted hair on your face and body, put on weight, and have oily or spotty skin.
- Having PCOS can mean problems getting pregnant for some women. But lots of women with PCOS do have children, with or without treatment.
- Losing weight may help with some of the symptoms of PCOS.
- There are also several drugs that can help women with PCOS.

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## How do hormones work in your body?

Hormones are chemicals your body makes. They control all sorts of things that happen in your body. The hormones that are affected by PCOS help to control:

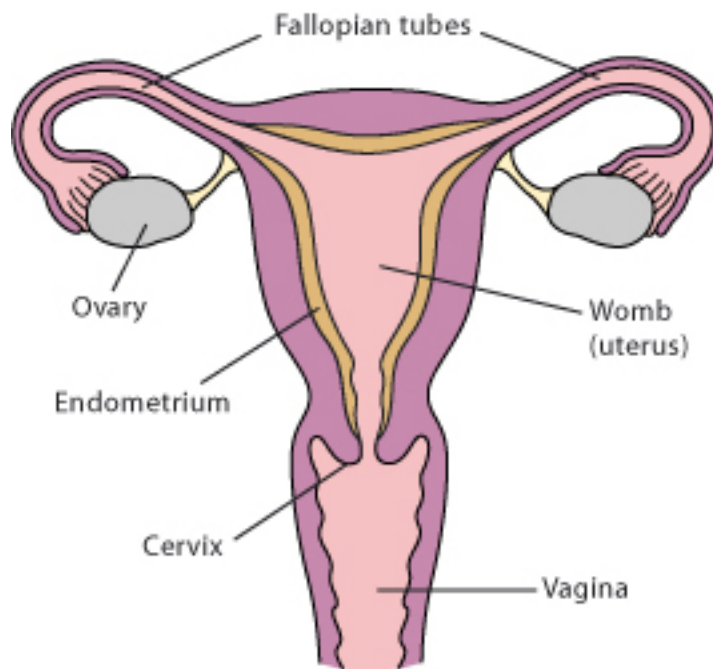
- Your periods
- Getting pregnant
- The way your hair grows on your face, head, and body
- Your skin
- Your weight.

Several hormones are made in your ovaries. Your ovaries are two small organs in your abdomen. They are part of your reproductive system. They're connected to your womb by tubes called fallopian tubes. The hormones that your ovaries make are called **oestrogens**, **androgens**, and **progesterone**. The amount of hormones your ovaries make is affected by other hormones, which are made by a gland near your brain.

As well as making hormones, your ovaries release eggs. Usually, your ovaries release one egg a month. This is called **ovulation**.

If you're healthy, the levels of hormones in your body go up and down as you go through your **menstrual cycle**. When your hormones are at a certain level, your ovaries release an egg. The egg travels towards your womb. If you have sex around this time, sperm can fertilise the egg. The egg then attaches itself to the wall of your womb and grows into a baby. But if you don't get pregnant, the thick lining of the wall of your womb breaks down, and you have a period.

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Your reproductive system sits in the lower part of your abdomen, between your hips.

The hormones in your body all affect each other. For example, **insulin** is a hormone that controls how much sugar (glucose) you have in your bloodstream. But the amount of insulin in your blood also has an effect on the amount of androgens your body produces. <sup>[1]</sup> Androgen hormones affect your sex drive, your skin, the way your hair grows, and how much energy you have.

### What happens in polycystic ovary syndrome?

If you have PCOS, some of the hormones in your body are out of balance. <sup>[1]</sup> Usually, the hormones that affect your period go up and down through your menstrual cycle. If you have PCOS, they may stay at the same level instead. <sup>[2]</sup>

This means that the parts of your body that are controlled by these hormones may not work the way they should. Your ovaries may not release eggs regularly. So you don't get regular periods. This can make it hard for you to get pregnant.

As well as affecting your periods, hormones affect lots of other things your body does. Androgen hormones can change fine hairs on your body into longer, thicker hair, like the hair that grows on your head, in your armpits, or in your bikini area. Women with PCOS sometimes have slightly raised levels of androgens. This can cause thicker hair in unwanted places.

Androgens can also make the pores in your skin produce more oil. This can give you spots ( [acne](#) ). <sup>[3]</sup>

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PCOS also seems to affect the way the body responds to a hormone called insulin. Insulin affects the amount of sugar in your blood and the way your body uses energy. Having a lot of insulin can also make you produce more androgens.

Doctors think that your hormones are likely to have been out of balance right from when you first started to get your periods. But you might not have noticed it for a few years, because young girls often have irregular periods at first. <sup>[1]</sup>

Women with PCOS often have small, fluid-filled swellings (cysts) on their ovaries. That's how polycystic ovary syndrome gets its name. Polycystic means with lots of cysts. Doctors don't know exactly why some women get these cysts.

Often, putting on weight can make the symptoms of PCOS more noticeable. Doctors don't think that having PCOS makes you overweight, but women with PCOS often find it very hard to lose weight. <sup>[1]</sup>

### Polycystic ovary syndrome: why me?

We don't know why some women get PCOS. But it seems to run in families. So, the genes you inherit from your parents may play a part. <sup>[4]</sup>

- About 4 in 10 women with PCOS have a sister who has it.
- About 2 in 10 women with PCOS have a mother who has it.

### What are the symptoms of polycystic ovary syndrome?

If you have polycystic ovary syndrome (PCOS), you probably have irregular menstrual periods or no periods at all. That's because your ovaries aren't releasing eggs regularly.

There are other symptoms of PCOS, but having irregular periods is the most common one. However, it's possible to have PCOS and not have many symptoms. About half of the women who have PCOS only have one or two of the symptoms we talk about on this page. <sup>[5]</sup>

#### Your periods

More than 7 in 10 women with PCOS have irregular periods, few periods, or none at all. <sup>[6]</sup> Doctors say you have periods less often than usual if you have nine or fewer periods in one year. <sup>[7]</sup>

Most women have a menstrual cycle that lasts for about 25 to 35 days. That's the time from the start of one period to the start of the next. If you have PCOS, and you do have periods, you'll probably find that your cycle is longer than that.

You may find that, when you do have periods, they're heavy and last for a long time. <sup>[6]</sup> That's because, when you're not releasing eggs, the lining of your womb may build up. Then, when you do have a period, your womb lining is thicker than it would be otherwise.

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Getting rid of this extra lining means your bleeding is heavier and lasts longer. But not everyone with PCOS gets heavy periods. Some women find their periods are light. <sup>[8]</sup>

It can be annoying not knowing when you're likely to get a period. Not knowing when you will have your period makes it hard to plan things. However, having an irregular period doesn't necessarily mean you have PCOS. Most girls, for example, have irregular periods for one year or so after they go through puberty. <sup>[9]</sup>

### Difficulty getting pregnant

PCOS is one of the main reasons why women find it hard to get pregnant. <sup>[6]</sup> It is harder to get pregnant if you have PCOS because your ovaries aren't releasing eggs (ovulating) regularly. But many women with PCOS do have children, with or without medical help. For some women who are overweight, losing weight can be enough to help them get pregnant. <sup>[6]</sup> Other women need fertility treatments.

To read more about getting pregnant if you have PCOS, see [What will happen to me?](#)

### Other symptoms

Some of the other symptoms that you may get if you have PCOS are: <sup>[5] [7] [8] [9]</sup>

- More hair than usual on your face, neck, chest, abdomen, back, bikini area, arms, and legs. Doctors sometimes call this hirsutism. You'll probably find that the hair is thicker and darker than the other hair on your body. About 7 in 10 women with PCOS have unwanted hair. You may notice this more if you have dark hair
- Skin problems. You may get greasy skin. Some women get spots ( [acne](#) ) on their face, back, or shoulders
- Being overweight, especially around your waist. About half of women with PCOS are very overweight ( [obese](#) )
- You may have patches of raised, velvety-feeling skin. It may be darker than the skin around it. You might get it on the back of your neck, inside your elbows, or between your breasts. This is called **acanthosis nigricans**
- You may find that the hair on the top of your head grows thinner or starts to fall out.

### How you feel about your symptoms

Women with PCOS often find their symptoms very upsetting. Some women say that they feel as if they are not a 'proper woman' because of their symptoms. <sup>[10]</sup> In one study, women with PCOS said they were most upset by having unwanted hair on their body or face, not having periods, and worrying about not being able to have children. <sup>[10]</sup>

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If you find any of your symptoms distressing, it's important that you tell your doctor. He or she may not realise how much they upset you. Some women with PCOS say they feel doctors don't always take their symptoms seriously.<sup>[10]</sup>

### Changes in your symptoms

You may have had fairly regular periods for a few years. Then you may have noticed them getting less frequent.<sup>[6]</sup> Other symptoms of PCOS can also change over time. Some of the things that may affect your symptoms are:<sup>[9]</sup>

- Your weight. You may find your symptoms are worse when you're overweight. You may get more hair on your face, or more spots (acne)
- Medicines you are taking. Some drugs work in a similar way to your hormones. Drugs can have side effects that are similar to the symptoms of PCOS. Other drugs may help your symptoms. For example, some types of contraceptive pill can help reduce unwanted hair or oily skin
- Pregnancy. Being pregnant changes the balance of hormones in your body. Anything that alters your hormones can affect your symptoms of PCOS.<sup>[6]</sup>

### How do doctors diagnose polycystic ovary syndrome?

It often takes a long time to get diagnosed with polycystic ovary syndrome (PCOS). Many women aren't diagnosed until they are in their 30s. This is partly because there are so many different symptoms.

Many women have only one or two of the symptoms of PCOS.<sup>[20]</sup> This can make it hard for doctors to spot the condition. Also, many women don't go to the doctor until they've had symptoms for quite a long time. You might not be worried about irregular periods, for example, until you start trying to get pregnant.

There's no single test or symptom that shows you have PCOS. Doctors look to see if you have two of the three main symptoms of PCOS.<sup>[21]</sup> These are:

- Your ovaries don't release eggs, or don't release them regularly. Your doctor will check this by asking about how often you have periods
- You have high amounts of **hormones** called androgens. Signs that you have high levels of these hormones include unwanted hair or spots (acne). Or your doctor can do blood tests to find out the amount of androgens in your body
- Your ovaries are covered in small, fluid-filled swellings (cysts). It's possible to check for cysts using an ultrasound. But not all women will need this test.

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Your doctor will also do tests to rule out anything else that could be causing your symptoms.<sup>[21]</sup> You're most likely to need blood tests.

Here are some things your doctor may do to find out if you have polycystic ovary syndrome.

### Questions your doctor may ask

Your doctor will want to know about the symptoms you are having, when you first noticed them, and whether they have changed over time. He or she will want to know:<sup>[22]</sup>

- How old you were when your periods started
- How often you have periods
- Whether you've ever had regular periods
- What your periods are like, if you get them. For example, are they heavy?

This will help your doctor work out whether PCOS is the cause of your problems. Most women with PCOS started their periods around the usual time (about 11 to 16 years of age) but have never had regular periods.

Women with PCOS often have trouble getting pregnant, and are more likely to have a miscarriage early in their pregnancy.<sup>[23]</sup> So, your doctor will ask:

- Whether you have ever been pregnant, or tried to get pregnant
- Whether you've ever had a miscarriage.

Lots of medicines can affect your hormones. These may give you some of the same symptoms as PCOS. So your doctor will want to check what medicines you're taking.

Women with PCOS often take great care to hide symptoms like hair on their faces, spots, or hair loss. For example, you may shave or wax unwanted hair. So your doctor will ask:

- Whether you've had any of these symptoms
- When you started getting them, and how quickly they came on
- Whether anything seems to make them better or worse.

Finally, PCOS seems to run in families. So your doctor will ask whether anyone in your family has had PCOS. And because PCOS is linked to blood sugar and insulin levels, he or she will also ask whether anyone in your family has had **diabetes** .

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## Physical examination

Your doctor will want to examine you without your clothes on to see which symptoms of PCOS you have. <sup>[22]</sup>

Although you can probably tell the doctor about most things, there may be some symptoms that you've missed. Also, it's hard to explain things like how much hair you have, exactly where it is, and what type of hair you have. If you are very self-conscious about the hair on your body, you may describe it as being worse than it really is. It's easier for the doctor to look and see, even though you may find this embarrassing.

Your doctor will be looking to see: <sup>[22]</sup>

- How much hair you have on your face and body, where it is and what sort of hair it is
- Whether you have spots (acne) on your face, shoulders, or back
- Whether you have raised patches of velvety skin.

Many women with PCOS are overweight. So your doctor will also check your weight, and may measure your waist. That's because women with PCOS tend to carry extra weight around their abdomen, rather than on their hips.

## Tests you may need

Doctors don't always agree about which tests you should have for PCOS. But you will almost certainly have some blood tests. These will look to see: <sup>[21]</sup>

- If anything else is causing your symptoms, like problems with your thyroid gland or an over-active adrenal gland. These glands make hormones, so if they're not working properly they may be causing your symptoms
- What levels of hormones you have in your blood. The tests will probably check for hormones called androgens, as well as follicle-stimulating hormone and oestradiol.

The hormone tests are to check whether your hormones are in the usual balance. But there are lots of different hormone tests and they're not all reliable tests for PCOS. So your test may not show up any problems, even if you do have problems with your hormones. <sup>[21]</sup>

Some doctors will check the levels of sugar in your blood. That's because women with PCOS are more likely to get diabetes. Diabetes means your body has trouble controlling the amount of sugar in your blood.

You may have an ultrasound scan of your lower body, to check whether you have fluid-filled swellings (called cysts) on your ovaries. An ultrasound uses sound waves to



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form a picture of the inside of your body. Not all doctors think you need these scans. But if your other tests are normal and doctors aren't sure whether you have PCOS, you may have a scan. <sup>[21]</sup>

Lots of women get some cysts on their ovaries. These may not cause any problems. Doctors say you have polycystic ovaries if you have more than 12 cysts, and they're 2 millimetres to 9 millimetres (between about one-twelfth and one-third of an inch) across. <sup>[21]</sup>

### How common is polycystic ovary syndrome?

Polycystic ovary syndrome (PCOS) is quite common. But no one knows exactly how many women have it. That's because lots of women don't see a doctor, or their doctor doesn't spot it.

Also, the tests that doctors use for PCOS have changed over the years, so it's hard to get a clear picture.

One study in the UK showed that about 7 in 100 women aged 18 to 25 have PCOS. <sup>[11]</sup> Other research suggests between 5 in 100 and 10 in 100 women have it. <sup>[12]</sup>

### What treatments work for polycystic ovary syndrome?

If you have polycystic ovary syndrome (PCOS), it means your hormones are out of balance. This can affect your periods, your weight, and the way hair grows on your body. PCOS also makes it harder for you to get pregnant.

You may find having PCOS upsetting, and feel embarrassed by symptoms like unwanted hair. But you're not the only woman who's had these feelings. PCOS is quite a common condition. And although there's no cure that can get rid of PCOS, there are some good treatments that can help with the symptoms. You may need different treatments over time, depending on the symptoms you get and whether you want to get pregnant.

### Key messages about treating polycystic ovary syndrome

- If you don't want to get pregnant, the first treatment you'll be offered will probably be the contraceptive pill. A contraceptive pill called co-cyprindiol may help with unwanted hair and with spots (acne).
- There are several drugs you can take that may help with unwanted hair. These include metformin, spironolactone, and finasteride.
- Metformin and contraceptive pills may also help you have regular periods.
- There are some things you can do for yourself that could help your symptoms. For example, losing weight may help. But there's not much research on this.

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- Some of the treatments we talk about for PCOS can help if you get spots. There are also creams and other treatments that can help get rid of spots. To read more, see our information on [Acne](#) .
- If you are trying to get pregnant, there are several treatments that can help. For example, you can have hormone treatments as tablets or injections. If these don't work, you can try in vitro fertilisation (IVF). There's also a type of keyhole surgery that aims to help your ovaries release eggs. It's called laparoscopic ovarian drilling. We look at treatments to help you get pregnant in our section on [Fertility problems](#) . Also, simply losing weight may help you get pregnant if you are overweight and have PCOS.

To find out more about the NHS treatments you're likely to be offered for PCOS, see [What to expect from treatment](#) .

Which treatments work best for PCOS? We've looked at the best research and given a rating for each treatment according to how well it works.

For help in deciding what treatment is best for you, see [How to make the best decisions about treatment](#).

### Treatment Group 1

#### Treatments for polycystic ovary syndrome

##### Treatments that are likely to work

- [Metformin](#) : This is a medicine that helps lower the amount of sugar in your blood. The brand name is Glucophage. [More...](#)
- [Anti-androgen drugs](#) : These are medicines that reduce the effect of androgen hormones in your body. They include spironolactone (brand name Aldactone) and finasteride (Proscar). [More...](#)

##### Treatments that work, but whose harms may outweigh benefits

- [Co-cyprindiol](#) : This is a type of contraceptive pill that reduces the effect of androgens in your body. The brand name is Dianette. [More...](#)

##### Treatments that need further study

- [Losing weight](#) : If you're overweight, doctors often recommend losing weight to reduce the symptoms of PCOS. [More...](#)
- [Ketoconazole](#) : This is a medicine that some doctors prescribe to reduce unwanted hair. The brand name is Nizoral. [More...](#)

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- [Hair removal](#) : There are lots of ways of removing unwanted hair, including shaving, creams, waxing, electrolysis, and laser removal. [More...](#)

### Other treatments

We haven't looked at the research on these treatments in as much detail as we've looked at the research on most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of them or be interested in them.

- [Contraceptive pills](#) : Many doctors prescribe the pill for women with PCOS who aren't trying to get pregnant. There are lots of types of pill. [More...](#)
- [Eflornithine cream](#) : This is a cream you put on your face to slow down hair growth. The brand name is Vaniqa. [More...](#)

### What will happen to me?

Polycystic ovary syndrome (PCOS) affects women in different ways. So it's hard to tell what will happen to you. It depends on what symptoms you get and whether you decide to have treatment.

### Getting treatment

Many women with PCOS will be treated by a specialist doctor. If your symptoms are very mild and you're not trying to get pregnant, you may not need to see a specialist. But if your symptoms are bothering you, or you are having trouble getting pregnant, you may need to see:

- A women's health specialist, called a **gynaecologist**. You may see a gynaecologist if you're having irregular menstrual periods or if you're having problems getting pregnant
- A **fertility specialist**. If you're having problems getting pregnant, you may see a specialist who can offer in vitro fertilisation (IVF) or other fertility treatments
- A specialist in hormonal problems, called an **endocrinologist**. Endocrinologists can deal with most of the problems you get with PCOS. You may also see an endocrinologist if you get [diabetes](#)
- A skin specialist, called a **dermatologist**. You may see a skin specialist if you're mainly having problems with spots ( [acne](#) ) or unwanted hair.

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## Changes in your symptoms

It's possible for your symptoms to change over time. Things that alter the balance of hormones in your body can affect the symptoms of PCOS. So, being pregnant or taking some drugs can change your symptoms. <sup>[13]</sup>

Your hormones also change when you reach the [menopause](#) . But we don't know whether this affects the symptoms of PCOS. There hasn't been much research.

## Putting on weight

Weight is often a major problem for women with PCOS. About half of all women with PCOS are very overweight ( [obese](#) ). <sup>[13]</sup> Some doctors think this is because many women with PCOS have problems controlling the amount of sugar in their blood.

If you want to find out whether you are overweight, you can work out your body mass index (BMI) using our [BMI calculator](#) . Your body mass index compares your height with your weight. Doctors usually say that people with a BMI of 25 or more are overweight. People with a BMI of 30 or more are obese.

## How PCOS can make you feel

Having PCOS can be upsetting. One study found that women with PCOS are less satisfied with their sex lives than other women, and worry more about whether their partner finds them attractive. <sup>[14]</sup> Women were most concerned about unwanted body hair and their weight.

Many women with PCOS feel anxious or depressed about their condition. <sup>[14]</sup> If you are feeling anxious or depressed, talk to your doctor. There are treatments that can help. To read more, see our section on [depression](#) .

## Having children

About 75 in 100 women with PCOS have some difficulty getting pregnant. <sup>[15]</sup> But that doesn't mean you won't be able to have children. Many women with PCOS are able to have children, either with or without fertility treatment. For more information about fertility treatment, see our section on [Fertility problems](#) .

If you're overweight, losing just a small amount of weight can start your ovaries releasing eggs regularly (ovulating). About 50 in 100 overweight women with PCOS who lose weight start ovulating again. <sup>[15]</sup>

You may need to lose about 5 percent to 10 percent of your bodyweight. So, if you weigh 90 kilograms (about 200 pounds), you'll need to lose about 4 kilograms to 9 kilograms (about 10 pounds to 20 pounds). But even losing less weight than this helps some women. <sup>[16]</sup> To read more, see [Losing weight](#) .

However, losing weight won't help if you're not overweight. You may need fertility treatment with drugs or surgery.

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About 80 in 100 women who take a drug called clomifene (brand name Clomid) start ovulating. And about 40 in 100 get pregnant without any further treatment.<sup>[15]</sup> If clomifene helps you, you may be able to get pregnant within a few months of starting to take it.

Unfortunately, women with PCOS are more likely to have a miscarriage in the first three months of their pregnancy. For a woman who doesn't have PCOS, the risk of a miscarriage is about 10 to 15 in 100. For a woman with PCOS, the risk is about 30 to 45 in 100.<sup>[15]</sup>

The risk seems to be higher if you are overweight. Some studies have shown that women are less likely to have a miscarriage if they are taking a medicine called [metformin](#) when they get pregnant.<sup>[15]</sup> But there's not much reliable research about this yet.

### Long-term problems

Many women with PCOS have problems with the way their body controls the amount of sugar (glucose) in their blood. The amount of sugar in your blood is controlled by the hormone insulin. Women with PCOS seem to need more insulin to control the amount of sugar in their blood than other people. This is sometimes called insulin resistance.

This means women with PCOS are at higher risk of developing [diabetes](#).<sup>[17]</sup> Diabetes is a condition where your body can't control the amount of sugar in your blood properly.

Between about 1 and 10 in 100 women with PCOS get diabetes. And between 10 and 35 in 100 women with PCOS have some trouble controlling the amount of sugar in their blood.<sup>[17]</sup> Doctors sometimes call this impaired glucose tolerance.

Diabetes and problems dealing with sugar are more likely if you're overweight. But some women with PCOS get diabetes even if they are slim.<sup>[17]</sup>

Your doctor may suggest you have a test to see if you have diabetes or impaired glucose tolerance. To find out more about diabetes and the treatments you can get, see our section on [Diabetes](#).

Most people with diabetes have a higher long-term risk of some health problems. For example, people with diabetes may be more likely to have [heart attacks](#) and [strokes](#). But we don't know if this is true for women who get diabetes because of PCOS. There's no evidence that women with PCOS are more likely to have heart attacks or strokes, or to die earlier than other women.<sup>[17]</sup>

Some doctors think that women with PCOS who don't have many periods may have a slightly bigger risk of getting cancer of the lining of the womb. That's because if you don't shed the lining with regular periods, it may get thicker. Some doctors think that if this happens, the cells may grow out of control and cause cancer. But we don't know for certain that women with PCOS have a higher risk of this type of cancer. There's not been much research.<sup>[17] [18]</sup>

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## Finding more help and advice

You may feel very isolated if you don't know anyone else with PCOS, or feel as if you're the only woman with these problems.<sup>[19]</sup> You may find it helpful to get in touch with other women with PCOS to find out about how they deal with the condition.

In the UK, a charity called Verity offers support for women with PCOS. For more information, you may want to look at their website <http://www.verity-pcos.org.uk>.

When you click on this link, please remember that we are not responsible for the information published on other Internet sites.

## Questions to ask your doctor

If you have polycystic ovary syndrome (PCOS), you may want to talk to your doctor to find out more.

Here are some questions you may want to ask:

- Do I need to see a specialist?
- How will PCOS affect my chances of having a baby?
- Should I have fertility treatment straightaway, or should I try to get pregnant naturally first? How long should I wait before asking for treatment?
- What can I do to improve my chances of getting pregnant naturally?
- If I do have fertility treatment, what treatments are available?
- Will I be able to have fertility treatments on the NHS?
- What can be done about my other symptoms, like unwanted hair and spots (acne)?
- If my symptoms aren't bothering me, do I need treatment for PCOS at all?
- What can be done to make my periods more regular?
- Should I be tested for diabetes?
- How can I avoid getting diabetes in future?
- Do I need to lose weight?
- What help and advice can you give me to lose weight? Can I see a dietitian?

## Treatments:

### Metformin

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[Can it be harmful?](#)

[How good is the research on metformin?](#)

This information is for people who have polycystic ovary syndrome. It tells you about metformin, a treatment used for polycystic ovary syndrome. It is based on the best and most up-to-date research.

### Does it work?

Yes, probably. If you take metformin every day, your periods may become more regular and you may have less unwanted hair. But there's not much good-quality research, so we can't be sure how well it works.

### What is it?

Metformin is a drug that helps to lower the amount of sugar (glucose) in your blood. It's usually used to treat people with [diabetes](#). But some doctors have started to use it for women with polycystic ovary syndrome (PCOS).

You take metformin as tablets or as a powder that you dissolve in water. One brand name is Glucophage. You'll need a prescription from your doctor to take this drug. Your doctor may start you on a low dose, then build up to a higher dose.<sup>[37]</sup> This helps to avoid side effects.

You'll probably need to see a specialist before you are prescribed metformin. He or she may suggest it if you've already tried [losing weight](#) or taking the [contraceptive pill](#), and they haven't helped or weren't right for you.

### How can it help?

If you have PCOS, taking metformin may:<sup>[38]</sup> <sup>[39]</sup> <sup>[40]</sup>

- Mean you get periods more often
- Make your periods more regular
- Reduce the amount of unwanted hair you have.

In one small study, women took either metformin or a dummy treatment (a [placebo](#)) for three months.<sup>[41]</sup> Overall, 50 in 100 women who took metformin found their periods became more regular. And 75 in 100 women in the study who were overweight found

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they got more regular periods with metformin. The women who took the placebo had no change in their periods.

But a big summary of the research said there isn't enough evidence to show whether metformin can help with many of the symptoms of PCOS. The researchers said more studies are needed to be sure it can be helpful. <sup>[42]</sup>

Researchers have also compared metformin with [co-cyprindiol](#) and other types of combined contraceptive pill. They looked at six studies with 174 women in total. We've summarised the results here: <sup>[43]</sup>

- The pill and metformin worked about as well as one another to reduce unwanted hair or spots
- The pill worked better for helping women have regular periods
- Metformin had a better effect on the levels of insulin hormone and fats in the blood.

### How does it work?

If you have PCOS, your hormones are out of balance. Your hormones play a part in how well your body controls the amount of sugar (glucose) in your blood. So, if they're out of balance, you may have too much sugar. Metformin works to reduce the amount of sugar in your blood.

The glucose in your blood is controlled by a hormone called insulin. Women with PCOS seem to need more insulin to control their glucose levels than other people. But too much insulin may make your body produce more androgen hormones. Androgen hormones affect lots of things in your body, including your skin and how your hair grows.

Metformin seems to help your body use insulin better. <sup>[44]</sup> It may also reduce the amount of glucose made by your liver. If you have less glucose in your blood, your body should produce less insulin.

Producing less insulin seems to make your body produce less androgen hormones. <sup>[44]</sup> This may help your symptoms of PCOS.

We don't know whether metformin works for women who have PCOS but don't have problems with the levels of sugar in their blood. <sup>[44]</sup> There hasn't been enough research.

### Can it be harmful?

Some women who take metformin do have side effects. But these are mostly mild.

You might feel some nausea or heartburn, or get diarrhoea. In the studies we looked at, only a few women got these side effects. Some of the women taking a dummy treatment (a placebo) got them, too. <sup>[41]</sup> So it might not have been the metformin that caused them.



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If you're getting side effects, tell your doctor. You may find the side effects go away if you take a lower dose. <sup>[44]</sup>

You can't take metformin if you have these medical conditions: <sup>[44]</sup>

- Severe kidney disease
- Severe liver disease
- Severe heart disease
- Severe lung disease
- You're an alcoholic.

### How good is the research on metformin?

There is some research which shows that metformin is helpful for treating polycystic ovary syndrome (PCOS). But there haven't been many good-quality studies.

One summary of the research (a [systematic review](#)) looked at 23 studies. Most of the studies were quite small and there are some problems with this summary that makes it hard to rely on completely. <sup>[42]</sup>

We also found five small studies ([randomised controlled trials](#)) comparing metformin with a dummy treatment (a [placebo](#)). <sup>[40] [45] [46] [47] [48]</sup> These studies found mixed results.

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## Anti-androgen drugs

In this section

[Do they work?](#)

[What are they?](#)

[How can they help?](#)

[How do they work?](#)

[Can they be harmful?](#)

[How good is the research on anti-androgen drugs?](#)

This information is for people who have polycystic ovary syndrome. It tells you about anti-androgen drugs, a treatment used for polycystic ovary syndrome. It is based on the best and most up-to-date research.

### Do they work?

Yes, probably. If you have polycystic ovary syndrome (PCOS), taking an anti-androgen drug may mean you get less unwanted hair on your face or body. But some of these drugs can have serious side effects. Also, you can't take them if you're pregnant or if you're trying to get pregnant.

# Polycystic ovary syndrome

## What are they?

Anti-androgens are drugs that reduce the effects of **hormones** called androgens in your body. You may be given one of these drugs to slow the growth of unwanted hair.

Some anti-androgen drugs are:

- Spironolactone (brand name Aldactone)
- Finasteride (Proscar)
- Flutamide (Drogenil).

These drugs come as tablets. You'll need a prescription from your doctor.

All of these drugs are usually used for other conditions. But they can be prescribed for women with PCOS by a specialist doctor. Flutamide isn't usually used for PCOS in the UK.

Your doctor may suggest one of these drugs if you are bothered by unwanted hair, and taking the [contraceptive pill](#) hasn't helped. Some women take these drugs as well as the pill. <sup>[49]</sup>

You can't take these drugs if you're pregnant. They could harm your baby. <sup>[50]</sup> So, you'll need to make sure you use contraception while you're taking them.

## How can they help?

You're likely to grow less unwanted hair if you're taking one of these drugs.

- Women who took spironolactone for six months had much less unwanted hair than women who took a dummy treatment (a **placebo**). <sup>[51]</sup> About 6 in 10 women said it helped.
- Finasteride also helped women have less unwanted hair. It worked better than a placebo, and just as well as a type of contraceptive pill called [co-cyprindiol](#). <sup>[52]</sup> <sup>[53]</sup>
- Flutamide also helped women have much less unwanted hair. <sup>[54]</sup> <sup>[47]</sup> <sup>[40]</sup> <sup>[55]</sup>

Each of the three drugs seemed to work about as well as the others. <sup>[56]</sup> <sup>[57]</sup>

You'll need to take these drugs for a long time (six months to 18 months) to see the full effect. That's because they make your hair grow more slowly, not fall out. So you may want to remove unwanted hair by shaving or other methods while they start to work.

When you stop taking these drugs, the hair will probably start to grow just as quickly as it used to. <sup>[49]</sup>

## How do they work?

Anti-androgen drugs help to block the effects of androgen hormones on your skin and hair. <sup>[58]</sup>

Androgens can turn fine, fair hairs into longer, thicker hairs, like the hair on your head or in your armpits. That's why women with higher levels of androgen hormones may grow thicker hair in unwanted places.

Androgens can also make your pores produce more oil. This plays a part in giving you spots (acne). <sup>[59]</sup>

Anti-androgen drugs help prevent these effects. So, as your hairs fall out and are replaced, they're likely to be thinner and shorter. Because it takes a long time for all your hairs to fall out and re-grow, it takes several months before you start to notice the difference. <sup>[58]</sup>

When you stop taking the drugs, the androgens start to work again and the thicker hair comes back.

## Can they be harmful?

Anti-androgen drugs do have side effects. The side effects vary for the different types. Here's what studies show.

In a study of 78 women taking spironolactone: <sup>[51]</sup>

- Three women dropped out of the study because they got very heavy periods
- About 1 in 10 needed to urinate more than usual
- About 1 in 10 had headaches.

In studies of women taking finasteride: <sup>[52]</sup> <sup>[60]</sup>

- 25 in 100 women felt dizzy
- 25 in 100 had dry skin
- Around 10 in 100 found their sex drive went down.

In women taking flutamide: <sup>[57]</sup> <sup>[60]</sup>

- Nearly 70 in 100 women had dry skin
- Between 10 and 20 in 100 found their sex drive went down
- 10 in 100 had stomach upsets.

# Polycystic ovary syndrome

We know that flutamide can damage your liver.<sup>[61]</sup> None of the women in the studies we looked at got liver damage. But for women who do get liver damage from flutamide, it can be very serious. Flutamide isn't usually used for PCOS in the UK. Anyone who does take it needs regular blood tests to make sure their liver is working normally.

## How good is the research on anti-androgen drugs?

There's some good research to show that these drugs can help women with polycystic ovary syndrome (PCOS) have less unwanted hair.

Several good-quality studies ( [randomised controlled trials](#) ) and summaries of the research ( [systematic reviews](#) ) looked at finasteride and found it helped PCOS symptoms.<sup>[62]</sup> <sup>[63]</sup> <sup>[64]</sup> <sup>[65]</sup> <sup>[66]</sup> <sup>[67]</sup> <sup>[68]</sup> <sup>[69]</sup> But most of these studies were small.

We found one [systematic review](#) looking at spironolactone.<sup>[69]</sup> But the review only included 78 women, and not all of them had PCOS.

We found several studies looking at flutamide.<sup>[70]</sup> <sup>[71]</sup> <sup>[72]</sup> <sup>[73]</sup> <sup>[47]</sup> <sup>[40]</sup> The studies showed that flutamide seems to work better than a placebo at reducing unwanted hair. But the studies were quite small, so we can't be sure how reliable they are.

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## Co-cyprindiol

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on co-cyprindiol?](#)

This information is for people who have polycystic ovary syndrome. It tells you about co-cyprindiol, a treatment used for polycystic ovary syndrome. It is based on the best and most up-to-date research.

### Does it work?

Yes, probably. If you have polycystic ovary syndrome (PCOS), there's some evidence that taking co-cyprindiol pills can reduce the amount of unwanted hair you grow. But it may also increase your chances of getting blood clots in your legs.

### What is it?

Co-cyprindiol is a type of contraceptive pill. It combines a type of oestrogen along with an anti-androgen drug, called cyproterone. The brand name is Dianette. You'll need a prescription from your GP for this medicine.

You might hear co-cyprindiol described as a combined contraceptive pill.

## Polycystic ovary syndrome

As well as being a contraceptive, co-cyprindiol is sometimes used for women who have spots ( [acne](#) ). It's also prescribed for women with PCOS who have unwanted hair.

### How can it help?

In one small study, women who took co-cyprindiol said they had much less unwanted hair growth after one year. <sup>[74]</sup> <sup>[75]</sup>

Other studies have compared co-cyprindiol with other drugs for PCOS, such as [metformin](#) and [finasteride](#) . There isn't much difference between them. <sup>[76]</sup> <sup>[43]</sup>

However, studies have found that taking co-cyprindiol with finasteride or metformin may work better than taking co-cyprindiol on its own. <sup>[43]</sup> <sup>[77]</sup>

### How does it work?

Co-cyprindiol pills contain a drug called cyproterone. It's a type of progestogen, a hormone used in some contraceptive pills. <sup>[74]</sup> It helps to reduce the effect of hormones called androgens in your body. <sup>[78]</sup>

Androgens can turn fine, fair hairs into longer, thicker hairs, like the hair on your head or in your armpits. That's why some women with PCOS grow thicker hair in unwanted places. <sup>[79]</sup>

Androgens can also make your pores produce more oil. This plays a part in giving you spots (acne). <sup>[79]</sup>

Anti-androgen drugs help prevent these effects. So, as your hairs fall out and are replaced, the new hairs are likely to be thinner and shorter. Because it takes a long time for all your hairs to fall out and re-grow, it takes several months before you start to notice the difference. <sup>[78]</sup>

When you stop taking the drugs, the androgens start to work again and the thicker hair comes back.

The other part of co-cyprindiol is an oestrogen hormone called ethinylestradiol. It's a type of oestrogen often used in contraceptive pills. Contraceptive pills containing both oestrogen and progestogen reduce the amount of androgen hormones your body produces. <sup>[80]</sup> This can also slow down hair growth. Contraceptive pills that contain two hormones, an oestrogen and a progestogen, are called combined contraceptive pills.

### Can it be harmful?

Co-cyprindiol, like all combined contraceptive pills, can have side effects. Possible milder side effects include nausea, headaches, changes in weight, breast tenderness, and increase in breast size. <sup>[29]</sup>

# Polycystic ovary syndrome

The pill can also affect your mood. You may feel depressed or have a lower sex drive. <sup>[29]</sup>

The pill has been linked to some more serious side effects. <sup>[29]</sup> For example, it can increase your risk of a blood clot and some kinds of cancer. These side effects can be worrying, but they're rare. It's also worth remembering that the combined contraceptive pill actually helps protect against some types of cancer, including cancer of the ovaries and cancer of the womb lining (endometrial cancer).

To read more, see [Side effects of combined contraceptive pills](#) .

## How good is the research on co-cyprindiol?

There's some evidence to show that co-cyprindiol helps to reduce unwanted hair for women with polycystic ovary syndrome (PCOS). But most of the studies are quite small.

One good-quality study (a randomised controlled trial ) compared co-cyprindiol with a dummy treatment (a placebo). <sup>[81]</sup> Doctors thought women who took co-cyprindiol had less hair on their bodies. But they didn't ask the women how happy they were with the results of their treatment. And the study was very small. It only looked at 20 women.

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## Losing weight

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on losing weight?](#)

This information is for people who have polycystic ovary syndrome. It tells you about losing weight, a treatment used for women with polycystic ovary syndrome who are overweight. It is based on the best and most up-to-date research.

### Does it work?

If you are overweight, losing weight may help reduce unwanted hair and improve how your body uses insulin. We don't know for certain if losing weight will help you get periods more regularly. That's because there isn't much research looking at this. But many doctors recommend you try this before any other treatment, and lots of women with polycystic ovary syndrome (PCOS) say it can be helpful.

Losing weight will work only if you are overweight. Don't try to lose weight if you're already at a healthy weight.

### What is it?

To lose weight, you need to eat fewer calories than you use up through the day. It sounds simple, but it can be very hard to do.

## Polycystic ovary syndrome

There are lots of diets intended to help you lose weight. But the key thing is to eat fewer calories than you use. Calories are a way of measuring the amount of energy in food. You can use up more calories by taking regular exercise.

About half of all women with PCOS are overweight. If you're not sure whether you need to lose weight, you could ask your doctor.

When doctors talk about a 'healthy' or 'ideal' weight, they mean a weight that lowers your risk of getting serious health problems, such as [heart disease](#) or [high blood pressure](#). It's not based on how thin you would like to look. <sup>[82]</sup>

Most doctors use the body mass index (BMI for short) to work out whether you're at a healthy weight. Your BMI is a number that's worked out from your height and weight. You can [work out your own BMI](#). This table shows what the different BMI scores mean. <sup>[83]</sup>

BMI	What it means
Less than 18.5	Underweight
18.5 to 24.9	Healthy weight
25 to 29.9	Overweight
30 and above	Obese

We don't know what the best diet is if you have PCOS and want to lose weight, but it has to be one that you can stick to. Some doctors think that eating more fibre and less saturated fat (such as butter and animal fat) may be particularly helpful for women with PCOS, but there hasn't been much research on this. <sup>[84]</sup> <sup>[85]</sup> You may find that losing weight in a group, such as Weight Watchers, is helpful. If you don't know how to start losing weight, ask your doctor if you can see a dietitian who has experience of working with women who have PCOS. For more information on how to lose weight if you are very overweight (obese), see our information on [Obesity](#).

### How can it help?

Some doctors say that losing weight is the best thing overweight women can do to improve their PCOS symptoms if they're overweight. But there hasn't been much research into losing weight to improve the symptoms of PCOS. So, we don't know for certain how helpful it can be.

One review of studies (a [systematic review](#)) looked at lifestyle changes to help women with PCOS lose weight, such as following a diet and taking exercise regularly. It found that women making these changes lost weight and had improvements in some PCOS symptoms, including less stomach fat, reduced unwanted hair, and improvements in how their body used insulin. <sup>[86]</sup>

We also found a small study that compared two diets. <sup>[87]</sup> One was a high-protein diet. Foods that are rich in protein include meat, soya and tofu, beans, nuts, cheese, and

## Polycystic ovary syndrome

eggs. The other was a low-protein diet, with more carbohydrates. Foods with lots of carbohydrates include potatoes, rice, and pasta.

The women followed the diets for 16 weeks. At the end of the study: <sup>[87]</sup>

- Just over 4 in 10 women found that their periods were more regular. It didn't matter which diet they'd followed. They both seemed to help
- The diets didn't seem to improve the amount of unwanted hair the women had.

Other studies have shown that losing weight may help overweight women with PCOS to start releasing eggs (ovulating). <sup>[88]</sup> <sup>[89]</sup> We haven't looked at these studies in the same way that we have most of the other research we cover. (For more information, see Our method.) But we wanted to mention them because you may be interested in them.

- One study showed that half of overweight women who lost some weight started to have regular periods. <sup>[88]</sup>
- Another study looked at 143 women with PCOS. <sup>[89]</sup> Half of them had advice on losing weight from a dietitian and also took a drug called [metformin](#). The other half just had advice on losing weight. After six months, both groups of women had much more regular periods. But taking metformin didn't seem to make much difference. The women who did best were the women who lost the most weight, whether they took metformin or not.

### How does it work?

Being overweight seems to make the symptoms of PCOS worse for many women. <sup>[90]</sup> So, it makes sense that losing weight would make PCOS symptoms better.

Also, if you are overweight, your body is more likely to have trouble controlling the amount of sugar (glucose) in your bloodstream. <sup>[91]</sup> This means your body may make more of the hormone insulin.

As well as controlling the levels of sugar in your blood, insulin can have an effect on other hormones. It causes your body to make more androgens. <sup>[92]</sup> Androgens are the hormones that cause problems like unwanted hair and spots for women with PCOS.

So, there are good reasons why doctors believe that losing weight may be helpful for women with PCOS if they are overweight. And staying at a healthy weight means you are less likely to get other health problems, such as high blood pressure, [diabetes](#), or heart problems.



## Can it be harmful?

If you're overweight, there's no evidence from the studies we found that losing weight can be harmful.<sup>[87]</sup> But you need to be sure that you are eating a healthy diet and getting all of the nutrients you need. Most advice suggests that you eat a mixture of different types of food, avoid too many sugary and fatty foods, and eat plenty of fruit and vegetables.

Don't try to lose weight too quickly. Losing weight steadily over several months is better than a crash diet that's hard to stick to.<sup>[93]</sup> To find out more, see [Diet, exercise, and behavioural therapy](#) in our section on obesity.

## How good is the research on losing weight?

There isn't much good-quality research to show that losing weight can help with the symptoms of polycystic ovary syndrome (PCOS).

We found one review of the research (a [systematic review](#)), which included six good-quality studies ( [randomised controlled trials](#) ). It found that lifestyle changes to lose weight, such as following a diet and taking exercise regularly, improved some PCOS symptoms, including reducing stomach fat and unwanted hair, and improving how women's bodies used insulin.<sup>[86]</sup> However, the studies were quite small, including only 164 women in total. More studies will need to explore this before we know for certain that losing weight will help if you have PCOS.

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## Ketoconazole

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

[How good is the research on ketoconazole?](#)

This information is for people who have polycystic ovary syndrome. It tells you about ketoconazole, a treatment used for polycystic ovary syndrome. It is based on the best and most up-to-date research.

## Does it work?

We're not certain. There's some evidence that ketoconazole can reduce the amount of unwanted hair you have, if you take it for six months.

## What is it?

Ketoconazole is a drug that was used to treat fungal infections, such as thrush. However, it is no longer used to treat fungal infections as it can cause serious liver damage in some people.<sup>[94]</sup> It's sometimes used to reduce unwanted hair, but it's not usually used this way in the UK.

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## How can it help?

We don't know for sure that it can. There hasn't been much research on using ketoconazole for polycystic ovary syndrome (PCOS).

In one small study, women who took ketoconazole for six months had less unwanted hair than women who took a type of contraceptive pill called [co-cyprindiol](#).<sup>[95]</sup> But there were problems with the way this study was carried out, so its results may not be reliable.

## How does it work?

Ketoconazole makes your body produce less androgen hormones. Androgen hormones make the fine hairs on your face and body become longer and thicker. So, having less of these hormones should reduce the amount of unwanted hair you grow.<sup>[96]</sup>

## Can it be harmful?

The study we found didn't look at side effects. But we know that ketoconazole can cause liver damage, especially if it's used for more than two weeks.<sup>[97]</sup> This can be life threatening. It was used to treat fungal infections, but it is no longer used in this way because of its serious side effects.<sup>[94]</sup> You are unlikely to be offered this drug.

## How good is the research on ketoconazole?

We found only one study looking at ketoconazole for women with polycystic ovary syndrome (PCOS).<sup>[98]</sup>

The study compared ketoconazole with spironolactone and a type of contraceptive pill called [co-cyprindiol](#).<sup>[98]</sup> Ketoconazole seemed to work as well as or better than these treatments. But there were only 141 women in the study, and there were problems with the way it was carried out. So, it's hard to rely on the results.

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## Hair removal

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it help?](#)

[Can it be harmful?](#)

[How good is the research on hair removal?](#)

This information is for people who have polycystic ovary syndrome. It tells you about hair removal, a treatment used for polycystic ovary syndrome. It is based on the best and most up-to-date research.

## Does it work?

We don't know for certain how well removing hair by shaving, using creams, waxing, having electrolysis, or having laser treatments works. That may sound odd: obviously if

## Polycystic ovary syndrome

you remove hair, it's not there any more. But we'd like to find out which methods work best, whether any of them stop hair growing back quickly, and which have the least side effects. Unfortunately, there hasn't been much research looking at this. So, we can't tell you for certain how well all the different ways that you can remove hair work.

### What is it?

There are lots of different ways to remove unwanted hair. You've probably tried some of them yourself, especially if unwanted hair is one of your symptoms of polycystic ovary syndrome (PCOS).

We are looking here at what doctors call mechanical ways of removing hair. This means you reduce the amount of hairs you have by removing them from your body. To see a list of different methods for removing hair, and some information about how they work, see [Ways of removing hair](#) .

You can do some of these things yourself, at home, like shaving and using hair-removal creams. Others, like waxing and electrolysis, are often done at beauty salons. The important thing is to find the method that works best for you. That might involve trying a few different methods.

### How can it help?

It's hard to say exactly how these treatments can help, because there's been so little research looking at how well they work. But, if you find unwanted hair upsetting, removing it in a way you find convenient can help you feel better about yourself and the way you look.

Some research has found that laser treatment can reduce unwanted hair by around half.<sup>[99]</sup> One study involved 88 women who had four or five treatments on their faces, over six months. Half had laser treatment and half had a dummy treatment (a placebo) using a low-powered laser.<sup>[100]</sup>

The women who had the laser treatment said they had much less hair on their faces by the end of the study. The women who had the dummy treatment didn't notice much difference.

Lots of private clinics offer laser hair removal. If you decide to have this treatment, make sure the clinic you choose is registered with the Care Quality Commission. Clinics providing laser skin treatments must register by law. You can ask to see a certificate of registration, or check at the [Care Quality Commission](#) 's website.

### How does it help?

Some types of hair removal, for example shaving or using hair-removal creams, cut off or dissolve the hair that is visible above the skin. So the hair is gone, but only for a short time, until it grows back.

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Others, like waxing, take the hair out by the roots. So, it may take a bit longer for the hair to grow again.

Electrolysis is meant to destroy the hair root (follicle), so that a hair can't grow back. And some types of laser treatment also seem to damage the hair follicle and slow down how quickly hair grows back.

But we don't know for certain how well treatments like electrolysis and lasers work at stopping the hair from growing back. There's not enough research to say.

### Can it be harmful?

Removing hair can have side effects. For example, shaving can irritate your skin. Waxing can cause in-growing hairs, which can be sore. But we don't know how likely you are to get these, because the studies we found didn't look at this.

### How good is the research on hair removal?

There are very few studies looking at ways of removing hair for women with polycystic ovary syndrome (PCOS).

We found one summary of the research (a [systematic review](#)) on removing unwanted hair with lasers.<sup>[99]</sup> It found that women had about half as much hair in areas treated after six months. But most of the studies in the summary weren't very good quality. Also, the studies only looked at two types of lasers, called alexandrite and diode lasers.

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## Contraceptive pills

In this section

[Do they work?](#)

[What are they?](#)

[How can they help?](#)

[Can they be harmful?](#)

This information is for people who have polycystic ovary syndrome. It tells you about contraceptive pills, a treatment used for polycystic ovary syndrome.

### Do they work?

We haven't looked at the research on contraceptive pills in as much detail as we've looked at the research on most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of this treatment or be interested in it.

### What are they?

Contraceptive pills (also called the pill) are likely to be the first treatment that you'll be offered when you're diagnosed with polycystic ovary syndrome (PCOS).<sup>[101]</sup> You'll probably be offered a combined oral contraceptive pill. There are lots of different types.

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They all contain two hormones, oestrogen and progestogen. But the exact type and amount of these hormones varies between brands.

There are two types of the pill that are often used for women with PCOS.<sup>[102]</sup> One is called co-cyprindiol (brand name Dianette). You can [read more about co-cyprindiol here](#)

The other contains the hormones ethinylestradiol (a type of oestrogen) and drospirenone (progestogen). Its brand name is Yasmin.

### How can they help?

Taking combined oral contraceptive pills may:<sup>[103]</sup>

- Help you have regular periods. However, your ovaries still won't release eggs
- Help with spots ( [acne](#) ) or unwanted hair
- Reduce your risk of getting cancer of the lining of the womb (endometrial cancer).  
<sup>[104]</sup>

Researchers have compared the contraceptive pill with another type of medicine for polycystic ovary syndrome called [metformin](#) . They looked at six studies covering 174 women.<sup>[43]</sup>

- The pill and metformin each worked about as well as the other to reduce unwanted hair or spots
- The pill worked better for helping women have regular periods
- Metformin had a better effect on the levels of insulin hormone and fats in the blood.

### Can they be harmful?

The pill can cause side effects. Possible milder side effects include nausea, headaches, changes in weight, breast tenderness, and increase in breast size.<sup>[29]</sup>

The pill can also affect your mood. You may feel depressed or have a lower sex drive.  
<sup>[29]</sup>

The pill has been linked to some more serious side effects.<sup>[29]</sup> For example, it can increase your risk of a blood clot and some kinds of cancer. These side effects can be worrying, but they're rare. It's also worth remembering that the combined contraceptive pill actually helps protect against some types of cancer, including cancer of the ovaries and cancer of the lining of the womb (endometrial cancer).

To read more, see [Side effects of combined contraceptive pills](#) .

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### Eflornithine cream

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[Can it be harmful?](#)

This information is for people who have polycystic ovary syndrome. It tells you about eflornithine cream, a treatment used for polycystic ovary syndrome.

#### Does it work?

We haven't looked at the research on eflornithine cream in as much detail as we've looked at the research on most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of this treatment or be interested in it.

#### What is it?

Eflornithine is a cream that can slow down hair growth. It's meant to be used on the face. The brand name is Vaniqa. You can get it on prescription from your doctor.

Your doctor may suggest you try eflornithine if you've tried contraceptive pills and are still having trouble with hair on your face.

#### How can it help?

The cream affects a chemical in your pores that hairs need to help them grow. It should make the hair on your face grow more slowly and make the hairs smaller and thinner. <sup>[105]</sup> It has an effect only on the areas where you rub the cream. You may still need to use another method of removing hair on your face, but you shouldn't need to do it as often as before.

Eflornithine doesn't work for everyone. In studies, about 6 in 10 women said that they didn't have as much unwanted hair on their face after eight weeks. <sup>[105]</sup> You need to keep using the cream for it to work. If you stop using it, the hair comes back.

#### Can it be harmful?

Side effects weren't common in the studies, but a few women got stinging, tingling or a rash. <sup>[105]</sup>

## Further informations:

### What to expect from treatment

Not everyone with polycystic ovary syndrome (PCOS) needs treatment. It depends on the symptoms you get and how much they bother you.

Some treatments for PCOS either stop you getting pregnant or can't be used when you are pregnant. So, your treatment options depend on whether you want to get pregnant.

We've put the treatments you may need in the order in which doctors are likely to suggest them.

### Losing weight

If you are overweight, your doctor may suggest you try to [lose some weight](#) . Many women with PCOS find their symptoms improve if they lose a small amount of weight.

There are lots of diets you can try, although they all come down to reducing the amount of calories you eat. A calorie is a way of measuring how much energy there is in food. Most advice suggests that you eat a mixture of different types of food, avoid too many sugary and fatty foods, and eat plenty of fruit and vegetables. Exercise can also help you lose weight.

About half of overweight women with PCOS find that losing weight makes their periods more regular. <sup>[24]</sup> You'll probably need to lose about 5 percent to 10 percent of your bodyweight. So, if you weigh 90 kilograms (about 200 pounds), you'll need to lose about 4 kilograms to 9 kilograms (about 10 pounds to 20 pounds). But even losing less weight than this helps some women. <sup>[25]</sup>

### Contraceptive pills

If you don't want to get pregnant, the contraceptive pill (the pill) may be the first treatment your doctor suggests. Taking the pill may help with spots ( [acne](#) ) and unwanted hair. You should see a difference after about two months. <sup>[26]</sup>

Taking the pill will also mean you have a regular period, although your ovaries won't release any eggs.

There are lots of brands of the pill. Two types that are used for women with PCOS are:

- Co-cyprindiol (brand name Dianette)
- Ethinylestradiol and drospirenone (Yasmin).

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## Spironolactone or eflornithine

If you are taking the pill and are still having problems with unwanted hair, your doctor may suggest you take spironolactone tablets or use eflornithine cream. This should slow down hair growth. You should see a difference after three to six months with eflornithine cream, or after six to 18 months with spironolactone. <sup>[27]</sup>

If these treatments don't work, your doctor may suggest you try finasteride. You can't take spironolactone or finasteride if you're pregnant or trying to get pregnant.

## Metformin

Metformin is used quite often for women with PCOS. But some doctors think it doesn't work any better than losing weight. You'll probably need to see a specialist (an endocrinologist, gynaecologist, or fertility specialist) before trying this medicine. It may help you have more regular periods, fewer spots, and less unwanted hair. <sup>[28]</sup>

## Fertility treatments

You'll need these treatments only if you're having problems getting pregnant. If you're overweight, the first thing your doctor may suggest is losing some weight. For some women, this is enough to help them to get pregnant without any more treatment. <sup>[24]</sup>

If you're not overweight, or if losing weight hasn't helped, the first treatment you're likely to be offered is a drug called clomifene (brand name Clomid). It stimulates your ovaries into releasing eggs.

There are lots of other treatments for women who have trouble getting pregnant. To read more, see our information on [Fertility problems](#) .

## Side effects of combined contraceptive pills

The combined contraceptive pill can cause some side effects. Possible milder side effects include nausea, headaches, changes in weight, breast tenderness, and increase in breast size. <sup>[29]</sup>

Some women get high blood pressure , feel depressed, or find they have a lower sex drive. <sup>[29]</sup>

The pill can also cause more serious side effects. These may sound worrying, but the chance of getting a serious side effect is very small.

It's also worth remembering that the combined contraceptive pill can actually help protect against some kinds of cancer. You're less likely to get cancer of the ovaries or cancer of the womb lining (endometrial cancer) if you're taking the pill. <sup>[29]</sup>



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## Blood clots

The pill can increase your risk of getting a blood clot inside one of your blood vessels. If a blood clot forms in a vein deep in your leg, it's called a deep vein thrombosis (a DVT). But the chance of this happening is fairly small: <sup>[29]</sup>

- For women who don't take the pill, each year there's about a 5 in 100,000 chance of getting a DVT
- For women who do take the pill, the chance of getting a DVT is between 15 in 100,000 and 25 in 100,000, depending on the type of pill.

If a DVT travels through your bloodstream into your lungs, it can be very dangerous. But it's very rare for women to die of a DVT because of the pill. Over one year, the risk of dying of a DVT because of the pill is somewhere between 2 in a million and 10 in a million. <sup>[30]</sup>

If you have a blood clot in a deep vein, you'll probably get pain, swelling, warmth, and redness in one of your legs. See a doctor straightaway if you have any of these symptoms.

## Cancer of the cervix

Taking the pill for more than five years slightly increases your risk of getting cervical cancer. However, your overall risk of getting cervical cancer is low, whether you take the pill or not: <sup>[31]</sup>

- Out of 10,000 women who don't take the pill, doctors would expect to see 38 cases of cervical cancer by the age of 50
- Out of 10,000 women who took the pill for five years from the age of 20, doctors would expect to see 40 cases of cervical cancer.

So, that's two extra cases of cancer in 10,000 women taking the pill. When you stop taking the pill, your risk of cervical cancer drops back to normal. <sup>[31]</sup> About 10 years after you finish taking the pill, your chance of getting cervical cancer is the same as if you'd never taken it.

Going for cervical screening (a smear test) can cut your risk of getting cervical cancer.

## A stroke

There's a small risk of having a stroke because of the pill: <sup>[32]</sup>

- Over one year, a woman not taking the pill has about a 4 in 100,000 chance of having a stroke
- This rises to about 8 or 9 in 100,000 for a woman taking the pill.

## Breast cancer

Some studies have found that the pill slightly increases a woman's chance of getting breast cancer.<sup>[33]</sup> But other studies have found no increase in risk. It's hard to make sense of the different results. It may be that women taking the pill see their doctors more often, so they are more likely to be diagnosed with and treated for breast cancer.<sup>[34]</sup>

Even if there is a possible, small increase in your risk of breast cancer while you're taking the pill, your risk drops back to normal when you stop taking it.<sup>[34]</sup>

## Ways of removing hair

### Shaving

Shaving unwanted hair is cheap and quick. But hair grows back quickly. Lots of people think that shaving hair makes it grow back faster or thicker. But that isn't exactly right. Shaving off the ends of hairs can make them feel thicker. Shaved hairs may also feel sharp or bristly. The hair doesn't grow back any faster.<sup>[35]</sup> But shaving can irritate your skin.<sup>[36]</sup>

### Hair removal creams

Hair removal creams dissolve hair above the skin. Again, the hair will grow back quickly, probably within a few days. These creams can be expensive if you use them often. They may irritate your skin, especially if you use them a lot or on sensitive parts of your body, like your face.<sup>[36]</sup>

### Waxing

Waxing removes hair by the roots, so it takes longer to grow back. You can get waxing strips to do it yourself at home, or you can have it done as a beauty salon. But waxing can be painful and it can irritate your skin. You may get in-growing hairs, which can get infected and sore.<sup>[35]</sup>

### Electrolysis

Electrolysis aims to damage the hair root (follicle), so that the hair doesn't grow back. It's done by beauticians in salons. A fine metal needle is put into a follicle, and a small electric current damages the root of the hair. But it takes a long time to cover all the hair you want removed, and treatments can be expensive.<sup>[36]</sup> Some people find it painful.

Electrolysis needs to be done by someone who's been specially trained. And it's important that all the equipment is sterile. Make sure whoever treats you is qualified to do it.

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## Laser treatments

Laser treatments use a focused beam of light to damage the hair root (follicle). It slows down the growth of hair, and after several treatments (maybe around four) you may find the hair doesn't grow back. It works best if you have light skin and dark hair. That's because the laser is set to destroy dark hair, without damaging surrounding light coloured skin. If your hair is light or your skin is dark, it won't work so well. <sup>[35]</sup>

Some people find laser treatment painful. Your skin may be red and inflamed for a couple of days afterwards. And, like electrolysis, it can be expensive to cover all the hair you want to have removed.

Lots of private clinics offer laser hair removal. If you decide to have this treatment, make sure the clinic you choose is registered with the Healthcare Commission. Clinics providing laser skin treatments must register by law. You can ask to see a certificate of registration, or check at the Care Quality Commission's website at <http://www.cqc.org.uk> .

### Glossary:

#### menstrual cycle

The menstrual cycle is the regular monthly process that causes an egg to be released from the ovaries so that a woman can get pregnant. The menstrual cycle causes her period, the bleeding that happens if she does not get pregnant.

#### insulin

Insulin is a hormone that helps your body use glucose. Glucose is a type of sugar that gives you energy. Insulin keeps the levels of glucose in your body steady. Insulin also helps glucose to be carried in your blood, so that the glucose can get into your cells. People who have diabetes do not have enough insulin or do not react to insulin strongly enough. This means they can get too much glucose in their blood.

#### genes

Your genes are the parts of your cells that contain instructions for how your body works. Genes are found on chromosomes, structures that sit in the nucleus at the middle of each of your cells. You have 23 pairs of chromosomes in your normal cells, each of which has thousands of genes. You get one set of chromosomes, and all of the genes that are on them, from each of your parents.

#### diabetes

Diabetes is a condition that causes too much sugar (glucose) to circulate in the blood. It happens when the body stops making a hormone called insulin (type 1 diabetes) or when insulin stops working (type 2 diabetes).

#### heart attack

Doctors call a heart attack an acute myocardial infarction (or acute MI). This is the name for the damage that occurs to the heart muscle if it isn't getting enough blood and oxygen because a branch of the coronary arteries is blocked. During a heart attack, you may have pain or heaviness over your chest, and pain, numbness or tingling in your jaw and left arm.

#### stroke

You have a stroke when the blood supply to a part of your brain is cut off. This damages your brain and can cause symptoms like weakness or numbness on one side of your body. You may also find it hard to speak if you've had a stroke.

#### hormones

Hormones are chemicals that are made in certain parts of the body. They travel through the bloodstream and have an effect on other parts of the body. For example, the female sex hormone oestrogen is made in a woman's ovaries. Oestrogen has many different effects on a woman's body. It makes the breasts grow at puberty and helps control periods. It is also needed to get pregnant.

#### high blood pressure

Your blood pressure is considered to be high when it is above the accepted normal range. The usual limit for normal blood pressure is 140/90. If either the first (systolic) number is above 140 or the lower (diastolic) number is above 90, a person is considered to have high blood pressure. Doctors sometimes call high blood pressure 'hypertension'.

#### placebo

A placebo is a 'pretend' or dummy treatment that contains no active substances. A placebo is often given to half the people taking part in medical research trials, for comparison with the 'real' treatment. It is made to look and taste identical to the drug treatment

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being tested, so that people in the studies do not know if they are getting the placebo or the 'real' treatment. Researchers often talk about the 'placebo effect'. This is where patients feel better after having a placebo treatment because they expect to feel better. Tests may indicate that they actually are better. In the same way, people can also get side effects after having a placebo treatment. Drug treatments can also have a 'placebo effect'. This is why, to get a true picture of how well a drug works, it is important to compare it against a placebo treatment.

## systematic reviews

A systematic review is a thorough look through published research on a particular topic. Only studies that have been carried out to a high standard are included. A systematic review may or may not include a meta-analysis, which is when the results from individual studies are put together.

## randomised controlled trials

Randomised controlled trials are medical studies designed to test whether a treatment works. Patients are split into groups. One group is given the treatment being tested (for example, an antidepressant drug) while another group (called the comparison or control group) is given an alternative treatment. This could be a different type of drug or a dummy treatment (a placebo). Researchers then compare the effects of the different treatments.

## heart disease

You get heart disease when your heart isn't able to pump blood as well as it should. This can happen for a variety of reasons.

## randomised controlled trials

Randomised controlled trials are medical studies designed to test whether a treatment works. Patients are split into groups. One group is given the treatment being tested (for example, an antidepressant drug) while another group (called the comparison or control group) is given an alternative treatment. This could be a different type of drug or a dummy treatment (a placebo). Researchers then compare the effects of the different treatments.

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