

## Patient information from the BMJ Group

# Menopause

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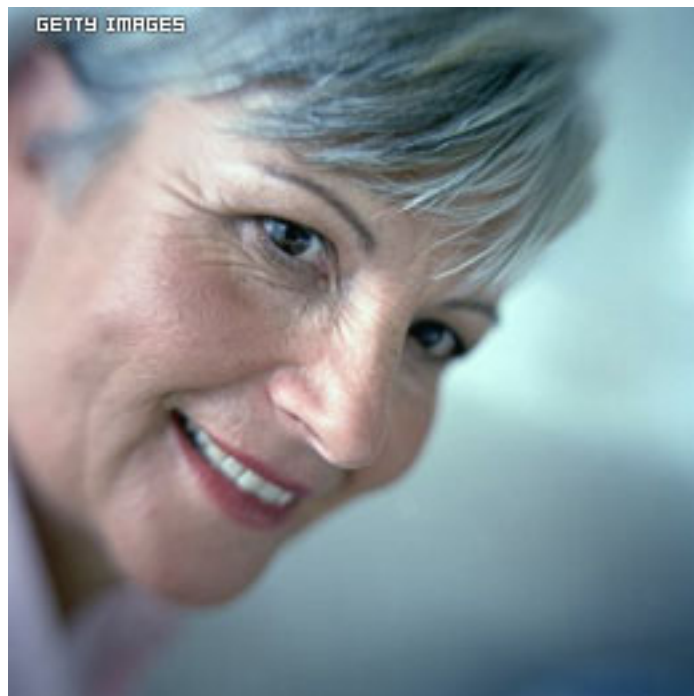
## Menopause

The menopause is part of every woman's life. Sometimes the symptoms caused by the menopause can be distressing. But there are treatments that can help.

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

### What is the menopause?

The menopause is when your periods stop for good. After you've gone through the menopause, you can't get pregnant. These changes don't happen overnight. You can get symptoms of the menopause for several years.



The menopause is a normal part of every woman's life.

The menopause isn't an illness. It's a normal part of every woman's life. But for some women the symptoms of the menopause can be distressing. Hot flushes can be

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uncomfortable and cause sleepless nights. A dry **vagina** can make sex painful. You may get **urinary infections**. And you may feel depressed. <sup>[1]</sup> <sup>[2]</sup> <sup>[3]</sup> <sup>[4]</sup>

If your symptoms are making life miserable, you don't have to just put up with them. There are treatments that can help, although some have side effects. You will need to weigh up the pros and cons of treatment and decide with your doctor what's right for you.

## Key points for women going through the menopause

- The menopause isn't an illness. It's a natural part of your life.
- It happens when your body stops making certain **hormones**.
- Symptoms of the menopause can be distressing. But you don't have to put up with them. You can get help.
- The main treatment for the menopause is [hormone replacement therapy](#) (HRT). But, if you don't want to take this, there are other treatments.
- There are things you can do yourself to help relieve symptoms of the menopause. See [Self-help for common menopausal symptoms](#).

## Your periods

Your periods are part of your **menstrual cycle**. <sup>[5]</sup> Every month, changes happen in your body to get it ready for pregnancy. Your menstrual cycle is controlled by lots of different hormones, including two made by your **ovaries**: **oestrogen** and **progesterone**.

Oestrogen isn't just one hormone. It's a group of hormones made by your body. But most people refer to all these hormones as oestrogen.

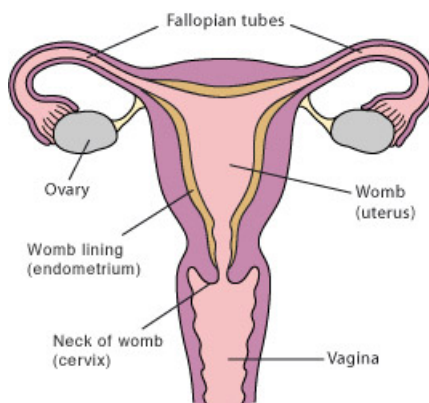
Each month your hormones cause an egg to come out of one of your ovaries. Hormones also make the lining of your womb (the **endometrium**) get thicker and softer in case you get pregnant.

At the end of your monthly cycle, if you're not pregnant, your hormone levels drop and you have your period. A period is your body's way of getting rid of the thickened lining of your womb. After your period your hormone levels start to rise and the whole cycle begins again.

Your menstrual cycle begins during **puberty**. On average, each cycle lasts about 28 days, but it can be shorter or longer.

To learn more, see [What happens every month](#).

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Your reproductive organs sit in the lower part of your abdomen.

It's also helpful to know something about the parts of your body involved in getting pregnant and having periods. Together, this is called your reproductive system. It includes your ovaries, your fallopian tubes, your womb, and your vagina. To find out more about these parts of your body, see [Your reproductive system](#).

## What happens when you reach the menopause

Strictly speaking, the menopause is the end of your very last period.<sup>[4]</sup> Of course, you can't know when you're having your last period. So it's impossible to know at the time if you have reached the menopause.

Your doctor will say you have definitely gone through the menopause when you haven't had a period for a year.<sup>[1]</sup> You can get symptoms of the menopause long before your periods stop for good. This is because the changes in your body that lead to the menopause start much earlier, even as early as 10 years before your last period.<sup>[6]</sup>

During the lead up to the menopause, your ovaries start to make less of two important hormones: oestrogen and progesterone. You make less of these hormones because, as you grow older, you start losing the eggs that are stored in your ovaries.<sup>[7]</sup> <sup>[8]</sup> When you are born there are hundreds of thousands of these young eggs stored in your ovaries. Only a few hundred are released during your lifetime. The rest begin to shrivel up and disappear as you get older.

It's these young eggs that stimulate your ovaries to produce the hormones oestrogen and progesterone. So, as you lose these eggs, your ovaries make less of these hormones too.

Researchers don't completely understand why your ovaries stop working when you get older.<sup>[9]</sup> When and how quickly your ovaries stop working may be partly something you inherit from your mother.

## The first signs of the menopause

In the years before you reach the menopause, you may notice that your periods aren't so regular. Or there may be a change in your patterns of bleeding. This is often one of the first signs that your hormone levels are changing. Doctors call this stage the **perimenopause**. It usually begins in your 40s and it can last for several years.<sup>[1]</sup> Some of the most common symptoms of the menopause, such as hot flushes and problems sleeping, can begin at this time.

Changes in your hormone levels can have lots of different effects on your menstrual cycle.<sup>[7]</sup> For example, when your ovaries start making less progesterone you may have heavier periods. The job of progesterone is to help prepare the womb for a fertilised egg. It also helps the womb to shed this lining if an egg isn't fertilised. If the ovaries don't make enough progesterone the lining of your womb may continue growing. This is why many women have such heavy periods during the perimenopause.<sup>[7]</sup>

During the perimenopause:

- You may have lighter or heavier bleeding than normal
- You may bleed for fewer days or more days than usual
- Your menstrual cycle may get shorter or longer
- You may skip a period.

All of these changes in bleeding patterns are normal during the perimenopause and they're nothing to worry about. But you should talk to your doctor if you have any of the following changes in your bleeding because you may have another condition that needs treating.

You should let your doctor know if:

- Your periods are very heavy (you need to change a tampon or pad every hour or two, you have to get up in the night to change your pad, or you have to wear both a tampon and pad)
- Your periods last more than six days
- The time between the start of one period and the start of the next is shorter than 21 days
- You get bleeding or 'spotting' between periods
- You bleed after having sex.

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Several things can cause this abnormal bleeding. The most common causes are:

- **Polyps** . These aren't cancer. They're growths in the lining of the womb or neck of the womb ( **cervix** )
- **Fibroids** . These aren't cancer. They're growths in the wall of the womb. To learn more, see our information on [Fibroids](#)
- **Endometrial hyperplasia**. This is a thickening of the lining of the womb. It can turn into cancer if it isn't treated.

All these things can be easily treated. However, certain kinds of cancer can also cause abnormal bleeding, although this is less common. So it's important to see your doctor.

## Reaching the menopause

Eventually your ovaries make so little oestrogen and progesterone that your menstrual cycle and your periods stop. This is when you have reached the menopause.

But your ovaries don't always stop producing oestrogen completely even after you've been through the menopause. Although levels of one form of oestrogen (called oestradiol) drop, you will still make a weaker kind of oestrogen (called oestrone). And another part of your body, your **adrenal glands** , will carry on making oestrone too. <sup>[4]</sup>

## You can still get pregnant

It's worth remembering that, until you're sure you've reached the menopause (that is, you haven't had a period for one year), you can still get pregnant. This is because your hormone levels go up and down, and your ovaries may still be releasing eggs ( **ovulating** ), even if it's only once in a while. And if your periods are irregular it may be more difficult to predict when you are likely to release an egg.

It's worth talking to your doctor about contraception if you are having sex and don't want to get pregnant.

## Having an early menopause

Most women will go through their menopause between the ages of 45 and 55 years, but some women have an early or 'premature' menopause. Doctors say a woman has an early menopause when it happens before she is 40 years old. Having surgery or other treatment for some diseases such as cancer are the most common reasons why women go through the menopause early.

To find out more, see [Early menopause](#) .

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## Having a late menopause

Some women still have periods even when they're over 55 years old. These women are said to have a delayed or late menopause. Having a late menopause usually runs in families, but it can also happen if you are overweight.

## When will the menopause happen to me?

The average age that women go through the menopause in the UK is 51 years.<sup>[8]</sup> Researchers don't know very much about the things that affect exactly when a woman will go through it.<sup>[8]</sup>

This is what we know from studies.

- Women who smoke are likely to go through the menopause one to two years earlier than women who don't smoke.<sup>[10] [11]</sup>
- Thinner women tend to go through the menopause earlier.
- If you've taken the contraceptive pill or have had children you may go through the menopause a little later than other women.
- The age at which you go through the menopause may be linked to the age at which your mother and grandmother went through it.

## What are the symptoms of the menopause?

Many of the symptoms you get with the menopause begin in the years leading up to it when your hormone levels start to change.

Some symptoms, such as hot flushes and a dry vagina, are caused directly by changes in your **hormones**.

But there are other changes, both physical and emotional, that you may experience during the menopause. You may put on weight, or find yourself feeling down or less energetic than usual. Or you may not feel like having sex.<sup>[2]</sup>

Researchers aren't sure whether these things are caused by changes in your hormone levels or whether there are other causes, such as ageing or the emotional changes that women may face at this time of life.

Here are some of the symptoms of the menopause.<sup>[1]</sup> You can click on the links to learn more.

- **Irregular periods** : Your **menstrual cycle** might get shorter or longer. You might bleed for more days or fewer days. Your period might be lighter or heavier. These changes are caused by changes in your hormone levels.

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- [Hot flushes](#) : Hot flushes are the most common symptom of the menopause. If you have a hot flush, your face and upper body suddenly feel very hot and may go red. This can last from 30 seconds to several minutes.
- [Night sweats](#) : Night sweats are hot flushes that happen while you sleep. They are often bad enough to wake you up.
- [Problems sleeping](#) : You might have difficulty falling asleep, wake up too early, or have your sleep disrupted by night sweats.
- [Dry vagina and pain having sex](#) : The lining of your vagina becomes drier and thinner during the menopause, which can make sex uncomfortable.
- [Urinary troubles and infections](#) : You might need to go to the toilet more often or find you get more urinary tract infections.
- [Losing interest in sex](#) : You might lose interest in sex, particularly if vaginal dryness makes sex uncomfortable or painful
- [Weight gain](#) : This may be related to changes in your hormones during the menopause.
- [Changes in your body](#) : You might, for example, gain weight around your waist or lose muscle. This could be related to the menopause or simply to getting older.
- [Feeling low or depressed](#) : You may feel depressed or get mood swings, which might be related to changes in your hormones. But most women go through the menopause without feeling depressed.

Not everyone gets these symptoms. Women experience the menopause in different ways. You may sail through it without any problems or with only mild symptoms. Or you may have severe symptoms that affect your enjoyment of life. <sup>[2]</sup>

One survey of nearly 7,000 women aged 45 to 54 years found that 84 in 100 had at least one common menopausal symptom, such as hot flushes or a dry vagina. <sup>[26]</sup> But for more than half the women the symptoms weren't a problem.

There are lots of things you can do to help yourself and keep healthy. To learn more, see [Self-help for common menopausal symptoms](#) .

### How do doctors diagnose the menopause?

Your doctor will usually be able to tell if you are going through the menopause from symptoms like hot flushes and night sweats.



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Strictly speaking, the menopause is the time when your periods stop. Most doctors say you have definitely reached the menopause when you've had no periods for a year. <sup>[1]</sup>

But you can get symptoms of the menopause long before your periods stop. This is because the changes in your body that lead to the menopause start much earlier, even as early as 10 years before your last period. If your symptoms are bothering you, it's worth seeing your doctor even if your periods haven't finished.

Your doctor will carefully consider the symptoms you are having. He or she may ask you questions about your symptoms to make sure that there's nothing else that could be causing them. And, of course, your doctor will consider your age. Most women begin the lead up to the menopause (which is called the **perimenopause**) between the ages of 45 and 47 years. <sup>[26]</sup>

Here are some of the things your doctor may ask.

- Have your monthly periods changed? For example, how long is it since you had a period? Are you having your period more often or less often than you used to? Has the bleeding got heavier or lighter?
- Are you having any symptoms of the menopause? For example, does your vagina feel dry or have you had urinary tract infections ?
- Are you having hot flushes or waking up at night sweating?

If there's doubt about whether your symptoms could be caused by the menopause (for example, if you're younger than 40), then your doctor may want to do a blood test called the FSH test.

## The FSH test

One of the ways doctors can tell if you are nearing the menopause is by doing an FSH test. They usually do it if they think your symptoms may be due to something other than the menopause.

This test measures the levels of a chemical called **follicle-stimulating hormone** (FSH) in your blood. When your oestrogen levels start to drop, the pituitary gland in your brain releases more FSH to try to get your ovaries to make oestrogen. For more about FSH see [What happens every month](#) .

So, if your levels of FSH are rising, you could be going through the menopause. <sup>[40]</sup> But if you are taking the contraceptive pill the FSH test won't work, because the pill affects your hormones .

Doctors don't normally rely on the FSH test to tell if you have reached the menopause. They can often tell just from your symptoms.



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## How common is the menopause?

The menopause is a part of every woman's life. And symptoms of the menopause, such as hot flushes, are common. But most women cope without any serious problems.

In the UK, the average age for going through the menopause is 51 years old.<sup>[8]</sup> A survey in Scotland looked at more than 6,000 women between the ages of 45 and 54 years.<sup>[34]</sup> It found that 84 in 100 of these women had at least one symptom of the menopause.

Symptoms of the menopause can be distressing. But for most women they're not serious. For example, about 57 in 100 women get hot flushes.<sup>[34]</sup> But only 22 in 100 women say that they're bad enough to be a problem.

## What treatments work for the menopause?

The menopause isn't an illness. It's a normal part of every woman's life.

But for some women the symptoms of the menopause can be distressing. Hot flushes can be uncomfortable and cause sleepless nights. A dry vagina can make sex painful. And you may have other problems, such as feeling depressed.

If your symptoms are bad and interfere with your life, you don't have to just put up with them. There are treatments that can help. You will need to weigh up the pros and cons of treatment and decide with your doctor what's right for you.

You and your doctor should also consider your medical history and that of your family to decide on the right type of treatment for you.

Bear in mind that, whatever you decide, you can always change your mind about your treatment. It's a good idea to review your decision about treatments with your doctor at an annual check-up.

## Key points about treating symptoms of the menopause

- **Hormone replacement therapy (HRT)** is the main treatment for menopausal symptoms. It relieves hot flushes and vaginal dryness, and reduces the chance of urinary infections. It can also help if you feel depressed.
- But HRT increases your chances of getting breast cancer. This increased risk is very small, but it gets bigger the longer you use HRT.
- HRT can also increase your chances of getting clots in your blood (called **thromboembolic disease**), getting heart disease and having a stroke. For most women these risks are small. The risk of having a blood clot gets smaller the longer you are on HRT.
- If you take HRT containing only oestrogen, you run a high risk of getting cancer in the lining of your womb (uterus). If you still have your womb, you will be prescribed another hormone called progestogen to protect against this cancer. If you've had

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an operation to remove your womb (a hysterectomy) you can take an oestrogen without taking a progestogen.

- A drug called tibolone (brand name Livial) helps with hot flushes and night sweats, and can increase your sex drive. Like HRT, tibolone slightly increases your chances of some serious side effects.
- We don't know whether **phyto-oestrogens** (plant oestrogens found in some foods, such as soya) help with symptoms of the menopause. There's not much research on herbal remedies either.

There are also things you can do to help yourself stay healthy and feel better. See [Self-help for common menopausal symptoms](#) .

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

For help in deciding which treatment is best for you, see How to make the best decisions about treatment.

## Treatment Group 1

### Treatments for the menopause

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

- [HRT](#) : HRT stands for hormone replacement therapy. You can get it in different forms including tablets, patches, gels and vaginal cream. HRT contains the hormone oestrogen, either alone or combined with another hormone called progestogen. Some oestrogen-only brands of HRT are Elleste Solo, Estraderm, Evorel, Harmogen, and Premarin. Some brands of combined HRT are Climesse, Femoston, Nuvelle, Premique, and Prempak-C. [More...](#)
- [Tibolone](#) : Tibolone is another hormone treatment. It's a drug that copies the action of the natural sex hormones in your body. The brand name is Livial. [More...](#)

#### Treatments that need further study

- [Antidepressants](#) : These drugs are normally prescribed for depression. Your doctor may suggest that you take an antidepressant if you are depressed during the menopause. There are different types of antidepressant. Some common ones (with some brand names) are imipramine, nortriptyline (Allegron), fluoxetine (Prozac), and sertraline (Lustral). [More...](#)
- [Clonidine](#) : This drug is usually used to treat high blood pressure but it's sometimes prescribed to treat hot flushes in women going through the menopause. The brand names are Catapres and Dixarit. [More...](#)

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- [Testosterone](#) : Testosterone is often used to help with hormone problems in men. It can be combined with an oestrogen to help women who have a low sex drive during the menopause. It's usually given to women as implants (small pellets put just under the skin). [More...](#)
- [Agnus castus](#) : This is a herbal remedy that's sometimes used to treat premenstrual symptoms. It's also been tried as a treatment for symptoms of the menopause. [More...](#)
- [Black cohosh](#) : This is a herbal product that some women take to try to help menopausal symptoms. But the research shows it may cause liver problems. [More...](#)

### Treatments that are unlikely to work

- [Phyto-oestrogens](#) : These are found in certain foods such as soya and herbs. You can also buy them as supplements. They work in the body like a weak form of oestrogen. [More...](#)
- [Acupuncture](#) : This usually involves inserting thin needles into the skin at various places called 'acupoints'. Other types of acupuncture involve the therapist using small electric currents or pressure with the fingers. [More...](#)

## What will happen to me?

Women experience the menopause in different ways.

You may sail through this time in your life with few problems. Or you may have severe symptoms that affect the quality of your life. <sup>[2]</sup>

You may feel liberated because you've stopped having periods. Or you may feel miserable because you know that you can no longer get pregnant and have children.

One large survey of women in Scotland (who were between 45 and 54 years old) found that, although most of them reported at least one symptom of the menopause, less than half said that their symptoms were a problem. <sup>[26]</sup>

Your experience of the menopause may depend on what else is going on in your life. <sup>[35]</sup>  
You may find it more difficult to cope with the menopause and the changes it brings if you're under stress for other reasons (for example, because of a crisis in your marriage or your children leaving home).

Your feelings about this time in your life will affect how you experience the menopause. Some women see the menopause as a positive step in moving on to the next stage of life. Other women feel anxious about the physical changes they are going through. <sup>[30]</sup>

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Whatever your experience, research has found that most women facing the menopause want information and reassurance. They want to know what to expect, and whether their experience is normal. <sup>[36]</sup>

## Will my symptoms go away?

When you reach the menopause, your body no longer makes some **hormones**. You can't get pregnant and have children after the menopause.

Bear in mind that you can still get pregnant in the time leading up to the menopause, even if your periods have stopped. It's only when you haven't had periods for a year that you've definitely reached the menopause and can no longer get pregnant. Before that, if you don't want children, you'll still need to use contraception.

But the good news is that your body should start to adapt to changes in hormone levels that happen at this time. This means that some symptoms, such as hot flushes and night sweats, will eventually disappear. This should happen regardless of whether you decide to have treatment for them. <sup>[37]</sup> One study found that symptoms of the menopause lasted about four years for the average woman. <sup>[38]</sup>

Some things that happen to your body when you reach the menopause are permanent. For example, after the menopause you may still have a dry vagina, which can make sex uncomfortable. There are things you can do to help yourself if you have a dry vagina (such as using an over-the-counter lubricant or moisturiser), or you may wish to consider medical treatment.

To find out more, see [Self-help for common menopausal symptoms](#) and [What treatments work for the menopause?](#)

## Your health after the menopause

In the years after the menopause you may be more likely to have certain health problems. Researchers think this may be because your body is no longer making **oestrogen**. <sup>[8]</sup> To find out more about why oestrogen is important, see [Oestrogen: its special role](#).

But your changing hormone levels are not the only thing that can affect your health after the menopause. Other things are important too, such as what you eat, how much exercise you do, and whether you smoke. There is a lot you can do to help keep yourself healthy as you get older.

Two of the most serious health problems for women in the years after the menopause are:

- [Thinning bones \(osteoporosis\)](#)
- [Heart disease](#).

You can look after your health as you grow older by: <sup>[39]</sup>

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- Eating a balanced, healthy diet with plenty of fruit and vegetables
- Drinking alcohol in moderation. It's healthier to have no more than one to two units of alcohol each day. A unit of alcohol is one small glass of wine, half a pint of ordinary beer or one pub measure of spirits
- Maintaining a healthy weight
- Not smoking
- Staying active, both physically and mentally.

### Questions to ask your doctor

If you're going through the menopause, you may want to talk to your GP to find out more.

Here are some questions that you may want to ask.

#### General questions

- How do I know I've reached the menopause?
- Is there a test I can have to find out whether I'm going through the menopause?
- What symptoms am I likely to get?
- How long will I have symptoms?
- Do I still need to use contraceptives?
- How will the menopause affect my health in the long term? What problems am I likely to get?
- Am I at higher risk of thinning bones ( osteoporosis ?) Is there any test I can take?
- Am I at higher risk of heart disease or stroke ?
- Should I have my blood pressure and my cholesterol levels checked?

#### Questions to ask your doctor about hormone replacement therapy (HRT)

- Which symptoms can HRT help with?
- How long should I take it?
- What side effects might I get with HRT?

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- Will the side effects go away?
- What are the different ways I can take HRT?
- Do some ways work better than others?
- Do some ways of taking HRT have fewer side effects than others?
- Do different HRT products have different doses of hormones ?
- What are the health risks with taking HRT?
- Am I at high risk or low risk of getting health problems from HRT?
- Can HRT help prevent any health problems?
- How can I work out if HRT is right for me?

### Questions to ask your doctor if you don't want HRT

- Are there other treatments that can help my symptoms?
- How can they help?
- What are their side effects?
- How long will I have to take them?
- Is there anything else I can do to relieve my symptoms?
- What other treatments can prevent thinning bones?
- Do I need to consider one of these treatments?

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## Treatments:

### HRT

In this section

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

# Menopause

This information is for women who have menopausal symptoms. It tells you about hormone replacement therapy (HRT), a treatment used for these symptoms. It is based on the best and most up-to-date research.

## Does it work?

Yes. Taking HRT can relieve some of the symptoms of the menopause such as hot flushes or a dry vagina. It can also help if you keep getting urinary infections or if you feel low. Many women say HRT makes them feel better generally and helps them enjoy life more.

But HRT also slightly increases your chances of having a stroke, getting breast cancer, or getting a blood clot in your lungs. If you are 60 or older it also increases the risk of heart disease. For most women, the risks are small, but you need to discuss them with your doctor before starting treatment.<sup>[51]</sup> If you're taking HRT, you should review your treatment with your doctor every year.<sup>[13]</sup>

## What is it?

HRT stands for **hormone replacement therapy**. It contains the hormone oestrogen. The aim is to restore some of the oestrogen that your body stops making when you reach the menopause. It's the drop in oestrogen at the menopause that causes symptoms such as hot flushes, vaginal dryness, urinary infections, and mood swings.

## Combined HRT or oestrogen-only HRT?

If you still have your womb, you'll be offered a combination of an oestrogen and another hormone called progestogen. Taking an oestrogen on its own increases your chances of getting cancer of the lining of your womb (endometrial cancer). Adding a progestogen to the oestrogen reduces your chances of getting this kind of cancer. This type of treatment is called **combined HRT**. Some common brands are Evorel Conti, Nuvelle, Premique, and Prempak-C.

If you've had an operation to remove your womb (a hysterectomy), you can take an oestrogen without a progestogen, because there's no risk of getting endometrial cancer. Some common brand names of oestrogen-only HRT are Premarin, Estraderm, and Evorel.

## How to take HRT

There are several ways you can take HRT. For example, you can take it in a way that copies your natural cycle and gives you a period. This is called **cyclical HRT**. With cyclical HRT you usually take oestrogen each day, with progestogen added for the last 10 to 14 days of each 28-day cycle. This type of HRT is often prescribed for women who are having menopausal symptoms but have not yet reached the menopause (they are still having periods).

Or you can take HRT that gives you the same amount of hormones every day and have no period. This is called **continuous HRT**. It is more suitable for women who have



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reached or are past the menopause and haven't had any periods for a year. To learn more, see [Ways to take HRT](#) .

## Which product is best for me?

HRT comes as lots of different products. You can take it as a skin patch, a tablet, a gel, an implant under the skin, or a vaginal cream, pessary, or ring. You can find the product that suits you best. To learn more, see [Different kinds of HRT products](#) .

The oestrogens used in HRT are made in different ways. But they are all made to act like the oestrogens produced by your body. To learn more, see [How HRT is made](#) .

There are several oestrogen-only and oestrogen-plus-progestogen drugs. To learn about these, see [Types of HRT](#) .

## How can it help?

Here are the main ways that HRT helps relieve symptoms of the menopause.

### Hot flushes

- If you take HRT tablets you will get fewer hot flushes. [\[52\]](#) [\[53\]](#) [\[54\]](#)
- It doesn't matter if you take oestrogen-only HRT or combined HRT. The effect is the same.
- It takes about three weeks for HRT to start working to reduce hot flushes. [\[55\]](#)
- Other forms of HRT, such as a patch or gel, should also reduce your hot flushes. But we don't know how the different HRT products compare. [\[56\]](#) [\[57\]](#) [\[58\]](#) [\[59\]](#) [\[60\]](#)
- Women with the worst symptoms get the most benefit.
- All doses of HRT will reduce hot flushes. Higher doses of oestrogen may work better, but they may also be more likely to cause side effects. [\[55\]](#) [\[61\]](#) [\[62\]](#)

### Vaginal dryness and urinary problems

- HRT can relieve vaginal dryness whether you use it as a cream, a patch, or a tablet. [\[61\]](#) [\[63\]](#) [\[64\]](#) [\[65\]](#) [\[66\]](#)
- If you find that having sex is painful, HRT can help. [\[61\]](#) [\[63\]](#) [\[65\]](#) [\[66\]](#) [\[67\]](#)
- You only need a low dose of HRT to relieve vaginal dryness and pain during sex. [\[61\]](#) [\[63\]](#)

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- HRT can stop you getting infections in your urinary tract (the parts of your body that carry urine out of your bladder).<sup>[68]</sup> Oestrogen creams and tablets that you put in your vagina (pessaries) work better at reducing urinary infections than oestrogen tablets.

### Feeling low and problems sleeping

- Taking HRT may help you feel less 'down'.<sup>[33]</sup> But we don't know if HRT helps women who are severely depressed.
- HRT may also help you sleep a bit better.<sup>[69]</sup>

### Feeling better generally

Some studies show that you're likely to have a greater feeling of well-being if you take HRT. You're likely to be less anxious, have more energy, sleep better, and feel more in control and less isolated. You may be able to do more physically and get fewer aches and pains.<sup>[69] [70]</sup> These benefits may help you cope with your family life, social life, and work.<sup>[71] [72] [73]</sup>

But not all the research agrees. One large study found that taking HRT for a year didn't seem to improve women's general health, their relationships with family and friends, their energy levels, or their sexual satisfaction.<sup>[69]</sup>

We don't know if oestrogen will help you think more clearly or help your memory. There isn't enough research to tell us.<sup>[74]</sup>

### How does it work?

Researchers think you get these symptoms at the menopause because your body is making less of the main female sex hormones, particularly oestrogen.

Oestrogen affects your body in lots of ways. For example, it keeps your vagina healthy, and it may help regulate your body temperature.<sup>[8]</sup> It may also have an effect on the chemicals in your brain that play a part in controlling your mood and how you think.<sup>[8]</sup> (These chemicals are called neurotransmitters.)

As you approach the menopause, your body starts to make less oestrogen. Replacing the oestrogen with HRT may help with symptoms such as hot flushes, a dry vagina, and feeling low.

### Can it be harmful?

Yes. There are several serious risks associated with taking HRT. You will need to talk to your doctor to weigh up the risks and benefits for you as an individual.

## Menopause

One large study on combined HRT was stopped early because researchers found the risks of taking HRT, especially the risk of breast cancer, outweighed the benefits.<sup>[21]</sup>

Most of the new research on the long-term risks and benefits of HRT looked only at combined HRT (oestrogen with progestogen). If you've had your womb removed you may be taking oestrogen on its own. We're still waiting to see more results of long-term studies that look at women who are taking oestrogen on its own. To learn more, see [HRT with oestrogen alone](#) .

Because of the problems linked to HRT, the government's Committee on Safety of Medicines advises that women should take the lowest dose of HRT that works for them, and take it for the shortest possible time.<sup>[75]</sup>

Here's a summary of what the research tells us about the risks of taking HRT.

- **Breast cancer:** Taking combined HRT (oestrogen plus progestogen) slightly increases your chances of getting breast cancer.<sup>[76]</sup> <sup>[77]</sup> For every 1,000 women who take HRT for five years, it causes an extra three or four cases of breast cancer.<sup>[76]</sup> Your risk goes up the longer you use HRT.<sup>[78]</sup> But five years after stopping HRT, your chance of getting breast cancer is the same as that of a woman who never took HRT.<sup>[78]</sup> Taking oestrogen-only HRT may also increase your risk. To learn more, see [Breast cancer and HRT](#) .
- **Blood clots:** Getting a blood clot is not dangerous in itself, but it can become life threatening if a clot travels through your blood and blocks an important blood vessel. Researchers have found that women who take combined HRT are twice as likely to develop blood clots as women who don't take HRT.<sup>[79]</sup> Taking oestrogen-only HRT may also increase your risk. However, the risk is small to begin with, so the increased risk for women who use HRT is still not very big.<sup>[80]</sup> <sup>[81]</sup> To learn more, see [Blood clots and HRT](#) .
- **Cancer of the lining of the womb (endometrial cancer):** If you still have your uterus (womb) and take oestrogen on its own, your chance of getting cancer of the womb lining (endometrial cancer) is higher. That's why most women who still have their womb take combined HRT. If you are taking combined HRT (oestrogen plus progestogen), you don't have a greater chance of endometrial cancer. To learn more, see [Endometrial cancer and HRT](#) .
- **Strokes:** Women who take combined HRT or HRT with oestrogen alone are slightly more likely than other women to have a stroke.<sup>[47]</sup> The risk is higher for women over 60 years of age.<sup>[80]</sup> To learn more, see [Strokes and HRT](#) .
- **Heart disease:** A large study found that women taking combined HRT have an increased chance of heart disease.<sup>[81]</sup> But the risk is small to begin with. When researchers looked more closely at these figures, they found that the only women

## Menopause

who had a greater chance of heart disease were those who were over 60 years and who had taken HRT for more than 10 years after the menopause.<sup>[82]</sup> Also, the chance of heart problems dropped back to normal after women stopped taking HRT.<sup>[83]</sup> To learn more, see [Heart disease and HRT](#) .

- **Ovarian cancer:** Taking combined or oestrogen-only HRT might slightly increase your chance of getting ovarian cancer.<sup>[84]</sup> One study followed almost a million women who had been through the menopause, for up to seven years. In women taking HRT for five years or more, 26 in every 10,000 got ovarian cancer, compared with 22 in every 10,000 who did not take HRT. That's one extra ovarian cancer for every 2,500 women using HRT.
- **Gallbladder disease:** One study found that women who take HRT (either oestrogen on its own or oestrogen combined with progestogen) are more likely to get problems with their gallbladder, such as gallstones.<sup>[85]</sup>
- **Urine incontinence:** One study found that women who take combined or oestrogen-only HRT for a year or more have a greater chance of urine incontinence (leaking urine) than women who don't. For women who already have urine incontinence, HRT may make their problem worse.<sup>[86]</sup>

### Less-serious side effects

You may also get less-serious side effects with HRT. Sometimes they go away when you have been on HRT for a while. Sometimes a change of product helps.

These side effects include:

- Unexpected bleeding from the vagina
- Tender breasts
- Headaches
- Mood swings.

Problems like unexpected bleeding aren't as serious as some other side effects of HRT. But they do mean that women who take HRT are more likely to need tests to check that there isn't a serious reason why they are bleeding, such as cancer.<sup>[87]</sup> This can be very worrying, and some tests are uncomfortable.

Many women also worry they are going to put on weight when they take HRT, and many women say that they do. But researchers have found that, although women may put on some weight when they first start to take HRT, after a while their weight is the same as it was before treatment.

## Menopause

A review that looked at the results of 22 different studies found that taking HRT had no effect at all on women's weight. <sup>[88]</sup>

### How do I know if HRT is right for me?

It's important that you talk over the risks of HRT with your doctor. For most women the risks are small. But for some women the risks may be greater than the benefits. You and your doctor will want to talk about whether you have any health problems or a history of problems in your family that may increase your risk.

### How good is the research on HRT?

There's good evidence that hormone replacement therapy (HRT) helps relieve menopausal symptoms such as hot flushes, a dry vagina, pain having sex, and urinary tract infections <sup>[52] [64] [95] [65] [66]</sup>. There's some evidence that it also helps with sleep problems, mood, and enjoyment of life generally, but the evidence for these is mixed. <sup>[96]</sup>

### What's the evidence that HRT can be harmful?

There are several large studies that have looked at the risks of taking HRT. Studies have looked at the risk of getting several conditions while taking HRT, including breast cancer, cancer of the womb lining, and heart disease. <sup>[21] [82] [84]</sup>

We found one large summary of research (a **systematic review**) that looked at the increased chance of breast cancer. <sup>[48]</sup> It reviewed 51 high-quality studies (**randomised controlled trials**) involving more than 160,000 women.

One big summary of research (called a **meta-analysis**) looked at the long-term risks of HRT. <sup>[12]</sup> More than 20,000 women took part in these studies. The studies lasted for nearly five years. So we know quite a lot about the possible side effects of HRT, from good-quality studies.

Because of the problems linked to HRT, the government's Committee on Safety of Medicines advises that women should take **the lowest dose of HRT** that works for them, and take it for **the shortest possible time**. <sup>[75]</sup>

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## Tibolone

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[How does it work?](#)

[Can it be harmful?](#)

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

This information is for women who have menopausal symptoms. It tells you about tibolone, a treatment used for these symptoms. It is based on the best and most up-to-date research.

# Menopause

## Does it work?

Yes. If you take tibolone, you're likely to have fewer hot flushes. Tibolone can also help with vaginal dryness.

Tibolone works better than [hormone replacement therapy](#) (HRT) to maintain your sex drive. But, like HRT, tibolone slightly increases the chances of some serious side effects. In particular, it increases your risk of a stroke, even more so than HRT does.

If you are older than 60, the risks of taking tibolone may outweigh the benefits.<sup>[97]</sup> You need to discuss the pros and cons of this treatment with your doctor.

## What is it?

Tibolone is a **hormone** treatment. You can take it for symptoms of the menopause such as hot flushes and a low sex drive. The brand name for tibolone is Livial.

Your doctor might also prescribe tibolone to prevent your bones thinning (a condition known as **osteoporosis** ).

Tibolone is made in a laboratory. It affects your body in the same way that some of your natural sex hormones do.

The good thing about tibolone is that it doesn't stimulate the lining of your womb. This means that if you start taking it at least one year after your periods have stopped, you shouldn't get any monthly periods as you would with some other hormone treatments. (To learn more, see [Ways to take HRT](#) .)

But if your last period was less than a year ago and you take tibolone, you have a high chance of getting a monthly period. So doctors usually give this treatment only to women who have definitely reached the menopause.

## How can it help?

If you take tibolone, you're likely to have:<sup>[98] [99] [100] [101] [102] [103] [104]</sup>

- Less than half as many hot flushes
- Less sweating
- Less vaginal dryness
- Improved sexual satisfaction
- More sexual fantasies and more sexual arousal
- More desire for sex.

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Researchers have found that sex drive increases much more in women taking tibolone than in women taking combined HRT (oestrogen and progesterone).

Your number of hot flushes should fall sharply during the first four weeks of taking tibolone. <sup>[105]</sup> If you were getting eight hot flushes a day before you started treatment, you may get about three on tibolone. <sup>[104]</sup>

### How does it work?

When you take tibolone your body breaks it down into substances that act like your body's natural hormones. This means it replaces the action of hormones that you lose when you reach the menopause. So, you don't get the symptoms linked with falling hormone levels.

### Can it be harmful?

Part of tibolone's effect comes from increasing the amount of hormones in your body called **androgens**. Androgen hormones may affect your sex drive but they also do other things, such as causing hair to grow. So, doctors were concerned that tibolone could cause extra hair growth and other problems, such as oily skin. But the studies we looked at didn't find any good evidence that this is a problem.

The most common side effect seems to be spotting or bleeding from the vagina. About 1 in 10 women get this. <sup>[106]</sup> But, in one study we looked at, only 2 out of nearly 450 women decided that the bleeding was so bad that they wanted to stop taking tibolone. <sup>[104]</sup>

Other side effects that have been reported include weight change, vaginal discharge, headaches, and upset stomachs. <sup>[107]</sup> But we don't know how often these happen.

One big study, which looked at the effect of tibolone on osteoporosis, found that it increases the chance of a stroke, even more so than HRT does. The increased chance of a stroke begins in your first year of treatment and increases as you get older. <sup>[97]</sup> Researchers aren't sure whether tibolone increases the risk of heart disease. Studies have shown that it reduces the amount of 'good' cholesterol ( HDL cholesterol ) by about one third. <sup>[108]</sup> <sup>[109]</sup> We don't know whether this drop in cholesterol is harmful.

Some studies have suggested that taking tibolone slightly increases women's chances of getting breast cancer and cancer in the womb (endometrial cancer). But there isn't enough good research on this yet to say for sure. <sup>[110]</sup> <sup>[111]</sup>

Another big study looked at whether women who had previously had surgical treatment for breast cancer had more chance of the cancer coming back if they took tibolone. <sup>[112]</sup> The study was stopped early, after about three and a half years, when it found that the breast cancer was more likely to come back for women who took tibolone than women who took a dummy treatment (a placebo).



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It's best to avoid tibolone if you're being treated for breast cancer or if you've had breast cancer before.

There needs to be more research to understand what happens to women who take tibolone, especially those who take it for longer than three years.

### How good is the research on tibolone?

We found fairly good evidence that tibolone works. But we will need to see the results from more studies before we'll be able to say what happens to women who take tibolone for a long time.

We found eight good-quality studies (called randomised controlled trials ) that looked at the effects of tibolone on symptoms of the menopause. <sup>[98] [99] [100] [101] [102] [103] [104] [105]</sup> The researchers found that tibolone reduced hot flushes and boosted sex drive.

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## Antidepressants

In this section

[Do they work?](#)

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[How can they help?](#)

[How do they work?](#)

[Can they be harmful?](#)

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

This information is for women who have menopausal symptoms. It tells you about antidepressants, a treatment used for these symptoms. It is based on the best and most up-to-date research.

### Do they work?

We don't know. There hasn't been much research on whether antidepressants help if you have symptoms of the menopause. They may help reduce the number of hot flushes you get.

Antidepressants can help with serious depression that is not directly linked to the menopause. To find out more, see our information on [Depression](#) . But we don't know if antidepressants work as well in depression that occurs because of the menopause (or during the menopause).

### What are they?

There are lots of different antidepressant drugs. They improve your mood by altering the levels of chemicals in your brain.

Some studies have found that antidepressants called selective serotonin reuptake inhibitors, or SSRIs, can reduce the number of hot flushes women have. Examples of SSRIs (and their brand names) include:

- citalopram (Cipramil)

## Menopause

- escitalopram (Cipralex)
- fluoxetine (Prozac)
- fluvoxamine (Faverin)
- paroxetine (Seroxat)
- sertraline (Lustral).

If you'd like to find out more about antidepressants, see our section on [Depression](#) .

### How can they help?

Some research suggests that antidepressants could help women have fewer hot flashes. <sup>[113]</sup> However, not all the research is positive.

Venlafaxine and paroxetine are two of the more promising antidepressants that have been tested as a treatment for hot flashes. <sup>[113]</sup>

Some studies have found that the antidepressant escitalopram slightly reduced the number of hot flashes women had. <sup>[114]</sup> <sup>[115]</sup>

However, there are some studies that found antidepressants didn't help with symptoms of the menopause. <sup>[116]</sup>

### How do they work?

Antidepressants change the levels of chemicals in the brain. The amount of hormones in the blood depends on signals from the brain. So some researchers think that taking antidepressants could increase hormone levels and improve symptoms during the menopause. But there's no evidence that this happens. It's just a theory.

Some women who are going through the menopause have mood swings and depression. It's possible that antidepressants could help with these symptoms. But there hasn't been enough good research, so we don't know for certain.

### Can they be harmful?

Antidepressants have lots of side effects. They may make you feel sleepy, agitated, or dizzy, or give you a headache. More rarely, they can give you vision problems, make it hard to pass urine, and cause liver and heart problems. <sup>[117]</sup>

### Self-harm and suicide

Research has found that children, teenagers, and young adults taking antidepressants of all kinds are more likely to think about suicide or try to harm themselves. <sup>[118]</sup>

# Menopause

The research doesn't seem to show an increased risk of suicidal thoughts or self-harm for people over the age of 24. <sup>[118]</sup> But doctors and caregivers are advised to keep a careful check on anyone taking antidepressants for signs of suicidal thoughts. You are more likely to get these thoughts in the early stages of your treatment, or if the dose of the antidepressant you're taking is changed. You may also be at risk if you have had thoughts about harming or killing yourself before. <sup>[119]</sup>

If you're taking an antidepressant and are worried about any thoughts or feelings you have, **see your doctor or go to hospital straight away**. You may also find it helpful to tell a relative or close friend about your condition. You could ask them to tell you if they think your depression is getting worse or if they are worried about changes in your behaviour. <sup>[119]</sup>

## How good is the research on antidepressants?

There are several studies looking at whether antidepressants help women who get hot flushes. <sup>[113]</sup> However, some of the early studies looked at women with breast cancer who were also taking other treatments. It's hard to say what these studies mean for healthy women.

Some newer studies have looked at relatively healthy women who are going through the menopause. <sup>[113]</sup> <sup>[115]</sup> Antidepressants seem to reduce the number of hot flushes women get, although the research is mixed.

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## Clonidine

In this section

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[How does it work?](#)

[Can it be harmful?](#)

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

This information is for women who have menopausal symptoms. It tells you about clonidine, a treatment used for these symptoms. It is based on the best and most up-to-date research.

### Does it work?

We don't know. There hasn't been much research looking at whether this treatment helps with symptoms of the menopause.

### What is it?

Clonidine is normally used to treat **high blood pressure**. It's a type of drug called an **antihypertensive**. Clonidine is also used to prevent migraines.

Doctors sometimes prescribe clonidine to women who are having symptoms of the menopause and who can't take [hormone replacement therapy](#) (HRT).

## Menopause

Clonidine is only available on prescription from your doctor. It comes as tablets. The brand names are Catapres and Dixarit.

### How can it help?

Some research suggests that clonidine may help women have fewer hot flushes.<sup>[120]</sup> But some of the studies looked at women with breast cancer who were also taking other treatments that may have affected the studies' results. This makes it hard to say whether clonidine really helps or not.

### How does it work?

Clonidine lowers blood pressure but researchers don't think this is how it relieves hot flushes.

No one really knows why women get hot flushes.<sup>[27]</sup> They may be triggered by a drop in levels of the female hormones, particularly oestrogen.<sup>[7]</sup> Oestrogen seems to affect the hypothalamus, the part of the brain that controls body temperature.<sup>[8]</sup>

If your body is overheated your brain sends a signal for blood vessels to relax. This means blood vessels widen and more blood gets near the surface of the skin. The air on your skin cools the blood, which helps cool your whole body. This is why your face tends to go red when you're hot. More of your blood is near the surface of your skin.

Lots of chemicals are involved in this process. The changing hormone levels during the menopause may disrupt this system.

Some scientists think clonidine reduces hot flushes by blocking the signals from your brain to your blood vessels. This means that your hormone levels don't affect your brain's ability to control your body temperature. So you get fewer hot flushes.

### Can it be harmful?

Possible side effects of clonidine include a dry mouth, constipation, trouble sleeping, headaches, and drowsiness.<sup>[120]</sup>

### How good is the research on clonidine?

There isn't much evidence that clonidine helps control symptoms of the menopause. In some of the research women were taking other treatments as well as clonidine. So it's hard to tell whether it works or not.<sup>[120]</sup>

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## Testosterone

In this section

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# Menopause

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

This information is for women who have menopausal symptoms. It tells you about testosterone, a treatment used for these symptoms. It is based on the best and most up-to-date research.

## Does it work?

We don't know. The research isn't good enough to give a clear answer. Some studies suggest testosterone helps with a low sex drive.

## What is it?

Testosterone is an important sex **hormone**. It's a type of hormone called an androgen.

You may hear testosterone described as a male hormone. But women also make testosterone, although they make much less of it. In women, testosterone is made mostly by the **ovaries**, although some is also made by the **adrenal glands**.

Testosterone gives men their male characteristics, such as facial hair and a deep voice. It also triggers sexual development and helps the growth of muscles and bones. Testosterone can be used as a treatment to help start **puberty** in boys who are very late in developing.

Testosterone can also be used to treat symptoms of the menopause. Doctors don't often prescribe it, but they may do if a woman is worried about her loss of sex drive. Testosterone may increase sexual desire and arousal in women going through the menopause. It's usually prescribed in addition to [hormone replacement therapy](#) (HRT).

For the menopause, you normally have testosterone as an implant (a small pellet put under your skin). Testosterone also comes as capsules (Restandol), a skin patch (Intrinsa), and injections.

## How can it help?

We're not sure it can help. There hasn't been enough good research to say.

Overall, studies suggest that testosterone can increase women's sex drive and enjoyment of sex.<sup>[121]</sup> It didn't seem to help with other symptoms of the menopause, such as hot flashes, but we need more research to know for certain.

## How does it work?

The hormone levels in women's blood change during the menopause. Some doctors think that testosterone is one of the hormones that's affected.<sup>[122]</sup> There's a theory that too little testosterone can cause health problems for women. It's also possible that less testosterone could mean a lower sex drive.

## Menopause

The theory is that testosterone treatment could make up for the lower amount of testosterone in women's bodies after menopause. But the research isn't clear yet about what role testosterone plays in the menopause, or whether taking testosterone can help.

### Can it be harmful?

There are worries that women who take testosterone may get masculine features such as a deep voice. Not much of the research looked at this. Studies so far suggest that women taking testosterone may have a greater chance of extra body hair. They may also be more likely to get acne (spots).<sup>[121]</sup>

Some research also suggests that testosterone could lower the amount of 'good' cholesterol ( HDL cholesterol ) in your blood.<sup>[121]</sup>

We don't know if there are any side effects of taking testosterone for a long time. There isn't enough good research.

### How good is the research on testosterone?

We didn't find any studies that looked at women who took testosterone on its own to help symptoms of the menopause. However, we did find a review of studies (a [systematic review](#) ) that looked at adding testosterone to [hormone replacement therapy](#) (HRT). This research suggests that women having both testosterone and HRT may have a higher sex drive than those who have HRT on its own.<sup>[123]</sup> But we need more research to confirm this.

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## Agnus castus

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 Agnus castus?](#)

This information is for women who have menopausal symptoms. It tells you about *Agnus castus*, a treatment used for these symptoms. It is based on the best and most up-to-date research.

### Does it work?

We don't know whether *Agnus castus* can help women with symptoms of the menopause. There isn't enough good-quality research to tell us.

### What is it?

*Agnus castus* is a herbal remedy. It comes from a tree called the chasteberry or chaste tree. The tree's Latin name is *Vitex agnus castus*.

You may also hear *Agnus castus* called:

## Menopause

- Hemp tree
- Monk's pepper
- *Vitex*, or Chinese *Vitex*.

Some women use *Agnus castus* to help with premenstrual symptoms. It's also been tried as a treatment for symptoms of the menopause. You can get it as tablets, capsules, or liquid drops from some health food shops.

### How can it help?

We don't know if *Agnus castus* can help. There hasn't been enough good-quality research looking at whether it works for the symptoms of the menopause.

### How does it work?

*Agnus castus* seems to affect the amount of some **hormones** in women's bodies. It's been used traditionally to treat conditions that are related to your hormones, such as premenstrual symptoms or breast pain. But we don't know if it can help with symptoms of the menopause.

### Can it be harmful?

*Agnus castus* doesn't seem to cause many side effects. Occasionally, it can cause mild problems such as an upset stomach, dizziness, a headache, tiredness, or a dry mouth. [\[124\]](#)

You should always tell your doctor about any herbal remedies you're taking. There's a chance they could react with other treatments that your doctor may prescribe.

### How good is the research on *Agnus castus*?

We haven't found any good-quality studies looking at whether *Agnus castus* can help women with symptoms of the menopause.

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## Black cohosh

In this section

[Does it work?](#)

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[How does it work?](#)

[Can it be harmful?](#)

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

This information is for women who have menopausal symptoms. It tells you about black cohosh, a treatment used for these symptoms. It is based on the best and most up-to-date research.



# Menopause

## Does it work?

We don't know whether black cohosh helps women with symptoms of the menopause. There hasn't been much good-quality research into it.

## What is it?

Black cohosh is a herbal remedy. It comes from a plant that belongs to the buttercup family. Latin names for the plant include *Actaea racemosa* and *Cimicifuga racemosa*.

Some other names for black cohosh are:

- Black snakeroot
- Bugbane
- Bugwort
- Macrotys
- Rattleroot
- Rattleweed.

Herbal products made from this plant are often promoted as a treatment for menopausal symptoms. It's claimed that they can help with hot flushes, mood swings, and sleeping problems. You can buy teas, capsules, tablets, and liquid extracts made from black cohosh from some pharmacies and health food shops.

## How can it help?

We didn't find much good-quality research looking at using black cohosh for symptoms of the menopause.

We found one summary of the research (a [systematic review](#)) that looked at nine studies. Overall, the studies found that taking black cohosh may slightly improve symptoms of menopause, but we need more research to confirm this. <sup>[125]</sup> <sup>[126]</sup>

## How does it work?

No-one knows how black cohosh could help with symptoms of the menopause. Some research suggests it may have an effect in your body that's similar to oestrogen. <sup>[127]</sup> But no one knows for certain.

## Can it be harmful?

The European Medicines Agency, which checks the safety of drugs and herbal products, has warned that black cohosh can cause [liver](#) problems. <sup>[128]</sup> It says that if you get any

## Menopause

of the symptoms below, you should stop taking black cohosh and see your doctor as soon as you can.

- Feeling tired
- Losing your appetite
- Getting yellow skin and eyes
- Having severe pain in the top of your stomach and vomiting
- Having dark urine.

Some people get mild side effects after taking black cohosh for a short time, but these problems usually go away on their own. For example, some people get an upset stomach or a rash. <sup>[127]</sup> <sup>[129]</sup>

You should always tell your doctor if you're taking herbal treatments. That's because they can sometimes react with treatments your doctor may prescribe.

### How good is the research on black cohosh?

There hasn't been much good research looking at black cohosh for symptoms of the menopause. Although some studies suggest it may improve symptoms a bit, we need more research to confirm this. <sup>[125]</sup>

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## Phyto-oestrogens

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[What are they?](#)

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[How do they work?](#)

[Can they be harmful?](#)

[How good is the research on phyto-oestrogens?](#)

This information is for women who have menopausal symptoms. It tells you about phyto-oestrogens, a treatment used for these symptoms. It is based on the best and most up-to-date research.

### Do they work?

Probably not. Some studies have found that phyto-oestrogens could help with symptoms of the menopause, such as hot flushes. But when researchers looked at all the studies together, they found no evidence that phyto-oestrogens had any benefits.

## What are they?

Phyto-oestrogens are chemicals that are found in some plants. ('Phyto' means 'from plants'.) They act like a weak form of oestrogen once they've been broken down by the body.

Soya products such as tofu and miso are rich in phyto-oestrogens, as are beans, lentils, certain fruits, wheat, fennel, and celery.

You can also get supplements containing phyto-oestrogens. One type you may see advertised are called **isoflavones**. Some examples are red clover tablets and soya isoflavones (which contain soya extract). You can buy them from pharmacies or health food shops.

In the past 10 years or so, scientists have become very interested in phyto-oestrogens. People in Asian countries eat far more soya foods and vegetables than people in the West do. Some researchers think that this may be why these countries have lower rates of heart disease, menopausal symptoms, and some cancers. But this is only a theory. <sup>[130]</sup>

## How can they help?

It's hard to be sure whether phyto-oestrogens help with symptoms of the menopause. Studies haven't always looked at the same types or doses of phyto-oestrogens, which makes it hard to see overall how well they work. In the best study, a group of researchers went through all the individual trials. <sup>[131]</sup> Overall, the evidence suggested that phyto-oestrogens don't work. Some trials had positive results, but they tended to small or poor-quality.

Of all the phyto-oestrogen substances that were studied in the trials, the only one that seemed to reduce the number or severity of hot flushes was genistein. Genistein is a substance found in soy, chick peas, lentils, and beans. <sup>[131]</sup>

## How do they work?

Scientists think that many symptoms of the menopause are caused by a drop in hormone levels, particularly in oestrogen levels. Because phyto-oestrogens act like oestrogens in the body, they may relieve some of these symptoms. However, phyto-oestrogens have much weaker effects than the oestrogens made by your ovaries.

## Can they be harmful?

Most of the research didn't talk about side effects of phyto-oestrogens. <sup>[120]</sup> <sup>[132]</sup> Very few studies have set out to look for possible side effects.

One study found that some women taking phyto-oestrogens got an upset stomach. <sup>[133]</sup>

## Menopause

Because some phyto-oestrogens act like oestrogen in the body, it's possible that they could increase the risk of breast cancer and cancer of the lining of the womb (**endometrial cancer**).

One study found that women who had taken 150 milligrams (mg, for short) of a phyto-oestrogen called isoflavone every day for five years were more likely to have **endometrial hyperplasia** than women who took a dummy treatment (placebo).<sup>[134]</sup>

Endometrial hyperplasia is when the number of cells in the womb lining increases. It's not cancer but it can turn into cancer if it's not treated. Of 154 women who took the supplement, 6 got hyperplasia compared with no women out of 165 who took a placebo. But the amount of phyto-oestrogen the women were taking was more than the usual recommended maximum of 80 mg.

In the UK, phyto-oestrogen supplements aren't regulated by the government. If you decide to take phyto-oestrogen supplements or extracts, buy them from a reputable pharmacy or health food shop.

It's a good idea to tell your doctor if you're taking these supplements, especially if you're also taking other medicine.

### How good is the research on phyto-oestrogens?

Different studies say different things about whether phyto-oestrogens help with symptoms of the menopause. So it's hard to say overall whether or not they work. Some studies have found that phyto-oestrogens help reduce hot flushes.<sup>[120] [132]</sup>

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## Acupuncture

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 acupuncture?](#)

This information is for women who have menopausal symptoms. It tells you about acupuncture, a treatment used for these symptoms. It is based on the best and most up-to-date research.

### Does it work?

Probably not. Some studies have found that acupuncture works better than having no treatment for reducing menopausal symptoms. But those studies also found that sham (fake) acupuncture worked just as well as the real treatment. A treatment can't really be said to work if it doesn't work better than a sham or 'placebo' treatment.<sup>[135]</sup>

## What is it?

There are several kinds of acupuncture. The best known involves inserting needles under the skin at certain points on the body. This has been used for centuries as part of traditional Chinese medicine. The needles are thought to stimulate parts of the body, to reduce pain and promote healing. In Chinese medicine acupuncture is used for dozens of physical and mental illnesses.

There is no scientific reason to think that the Chinese kind of acupuncture works. Most good-quality studies have found little evidence that it is useful.

Other kinds of acupuncture include the therapist putting pressure on certain points with the hands, or passing weak electric currents through needles inserted under the skin.

## How can it help?

It's doubtful whether acupuncture can help. One large review looked at results from 16 smaller studies that altogether included more than 11,000 women.<sup>[135]</sup> Some of the studies found that acupuncture slightly reduced the number of hot flushes that women had compared with having no treatment at all.

But acupuncture didn't work any better than sham acupuncture. Sham acupuncture is a fake (placebo) treatment, which doesn't have any medical benefit. In the studies, acupuncture didn't work as well as hormone replacement therapy.<sup>[135]</sup> Most of the studies were of the traditional Chinese type of acupuncture.

## How does it work?

In traditional Chinese medicine it is thought that there are important places on the body called acupoints. Gently inserting tiny needles is thought to stimulate these points, which promotes pain relief or healing. Those who practise traditional Chinese acupuncture say that stimulating these acupoints can help cure many conditions from arthritis to cancer. But research has failed to find much good evidence for this.

## Can it be harmful?

We're not sure about what side effects acupuncture might cause. Many of the studies into using this treatment for menopausal symptoms either don't mention side effects or they don't give enough information on them. One side effect mentioned in several studies is slight bruising where the needles are inserted.<sup>[135]</sup>

We need more good-quality studies into the possible side effects of acupuncture before we can say how safe it is.

## How good is the research on acupuncture?

There are quite a lot of studies on acupuncture to treat menopausal symptoms. But many of them are not high quality. For example, some of them don't mention possible side effects. And some don't compare acupuncture with sham ( placebo ) acupuncture.<sup>[135]</sup>

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This is important because of what's called the 'placebo effect'. This is when someone's condition or symptoms improve when they think they have had medical treatment, even though they haven't had real treatment - they've been given a placebo. (This could be a sugar pill, or a fake treatment such as sham acupuncture.) The placebo effect can be large. So a treatment has to be better than a placebo before we can say it works.

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## Further informations:

### Self-help for common menopausal symptoms

Here are some things that you can try to help yourself feel better. But bear in mind that there isn't any scientific evidence to show for certain that these things will help.

#### For hot flushes

- Breathe deeply and relax when you have a hot flush.
- Avoid things that trigger your hot flushes. Common triggers are spicy food, alcohol, hot drinks, and caffeine.
- Keep cool. Dress in layers that you can remove easily. Run your wrists under cold water. Keep a jug of iced water to hand. When you feel very hot, take a tepid shower.
- Sleep in a cool room. Have a fan, a cold drink, and wet wipes by your bed. Use cotton bed linen.
- You may need to sleep on your own sometimes to give you and your partner a better night's sleep.

#### For a dry or itchy vagina and pain having sex

- Check with your doctor to make sure that you don't have an **infection** .
- Try an over-the-counter lubricant or moisturiser, but make sure it's one for use in the vagina.
- Some experts say that having sex regularly can help keep your vagina healthy.
- Talk to your partner to find ways around any discomfort you feel during sex.

#### If you lose interest in sex

- If you have lost interest in sex and it bothers you, try talking to your sexual partner about this. Sometimes going to a counsellor can help.

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### For urinary problems such as incontinence, wanting to pass urine constantly, and infection

- Try pelvic floor muscle exercises. These involve repeatedly tightening and relaxing the muscles that control the flow of urine. Your doctor or the practice nurse should have information on how to do these.
- If you have incontinence (you can't control when urine comes out of your bladder), ask your doctor about treatments that can help.
- Make sure you drink plenty of water, even though you may not feel like it. This helps to keep your urinary system healthy and can help keep infections away.

### If you feel down or lacking in energy

- Do things that you enjoy. Make sure you see your friends.
- Eat a healthy diet and exercise regularly.
- Learn some stress-reduction techniques like yoga or relaxation exercises.
- Try to get plenty of sleep. Relaxation techniques and exercise may both help if you have problems sleeping.

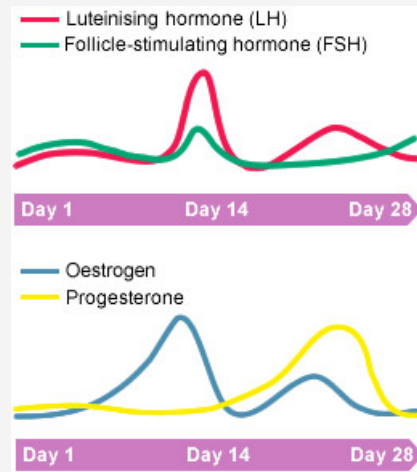
### What happens every month

Your menstrual cycle usually lasts about 28 days. But it can be as short as 20 days or as long as 36 days.

It's controlled by your hormones , and has three stages. <sup>[5]</sup>

# Menopause

## Early cycle



These graphs show how the levels of different hormones change during your monthly cycle.

- Your cycle begins on the first day of your period. Your levels of hormones are low at this time.
- In the first few days, part of your brain starts making a hormone called **gonadotrophin-releasing hormone (GnRH)**.
- GnRH tells another part of your brain to make two more hormones. They're called **luteinising hormone (LH)** and **follicle-stimulating hormone (FSH)**.
- They travel in your bloodstream to your **ovaries** . Here, the hormones tell eggs to start growing.
- The growing eggs make the hormone oestrogen.
- Oestrogen makes the lining of your womb (the endometrium) start to get thicker.
- One egg grows faster than the others. The rest shrivel up.

## Mid cycle

- In the middle of your menstrual cycle, your levels of luteinising hormone(LH) rise sharply.
- This helps the growing egg come out of your ovary. This is called ovulation.
- The egg goes into one of your **fallopian tubes** . The tube's tiny hairs push the egg along, towards your womb.



# Menopause

## Late cycle

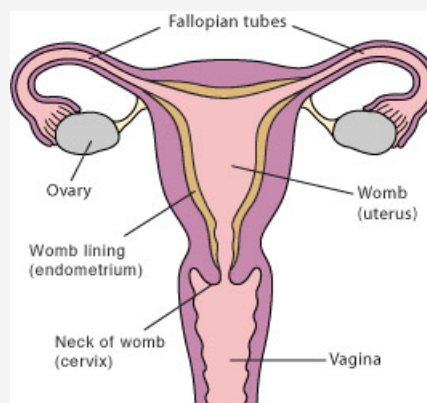
- Your body gets ready for pregnancy.
- Your ovaries keep making oestrogen and start to make lots of progesterone.
- Progesterone makes the lining of your womb (the endometrium) even thicker, so it's ready for a fertilised egg.
- If a fertilised egg arrives it may stick to your womb lining and start to grow. This is how pregnancy starts.

Two things can happen.

- You get pregnant. Your hormone levels stay high to keep your pregnancy going.
- You don't get pregnant. Your hormone levels start to drop. Without hormones, the lining of your womb breaks down, pulls away and flows out of your vagina. This is when you have your period. And your menstrual cycle starts all over again.

## Your reproductive system

The diagram below shows the parts of your body that are involved in getting pregnant (your reproductive system).



Your reproductive system.

- Your ovaries contain eggs. Inside your ovaries are millions of pre-eggs, called follicles. These were formed before you were born. Only some of them will become fully grown eggs.

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- Your fallopian tubes carry fully grown eggs from your ovaries to your womb. The tubes are lined with tiny hairs to push the eggs along. If an egg joins a sperm in the tube, this is called fertilisation.
- Your womb is where the fertilised egg starts growing. The lining of the womb is called the endometrium.
- Your cervix is the neck of your womb. Sperm have to pass through it to get to the egg.
- Your vagina is the passage leading up to your womb.

To get pregnant you need to release an egg from one of your ovaries. This is called ovulation. This normally happens every month as part of your menstrual cycle .

Your menstrual cycle begins during puberty . It lasts about 28 days, but it can be shorter or longer. It's controlled by your hormones . Hormones tell your ovaries to release an egg and help your body prepare for pregnancy.

### Early menopause

If your periods stop before you are 40 years old you are said to have gone through an early (or premature) menopause.

The most common cause of an early menopause is women having their ovaries removed by surgery. You may have this operation if you get [ovarian cancer](#) or another disease that damages your ovaries . It's usually carried out along with a hysterectomy , an operation to remove your womb.

If you have surgery that only removes your womb (and not your ovaries), or if only one ovary is removed, you may still get some symptoms of the menopause (such as hot flushes) earlier than you would normally. This could happen because removing your womb reduces the blood flow to your remaining ovary or ovaries.

Some medical treatments may cause an early menopause if they affect your pelvic area (the part of your body where your ovaries sit). Radiotherapy is sometimes used to treat cancer and it can damage your ovaries. This can make it difficult to get pregnant or can make you go through the menopause early.

If your ovaries are removed by surgery your body can't produce eggs or make the hormones oestrogen or progesterone ; you won't have periods or be able to get pregnant. Similarly, if your ovaries are damaged, the egg cells on the surface of the ovaries may be destroyed so they can't make enough of these hormones.

## Menopause

Occasionally, a disease can damage the ovaries. Diseases that can do this include mumps (although damage to the ovaries is rare) and autoimmune diseases such as rheumatoid arthritis . If you have an autoimmune disease, your immune system (which defends the body against illness) doesn't work properly and attacks the body's own organs and tissues.

Some women have an early menopause without doctors being able to find out why.

In women who go through the menopause naturally, hormone levels drop gradually. And even after a natural menopause, the ovaries may still be able to make some oestrogen from other hormones called androgens.

But if you have surgery to remove your ovaries, you will have a sudden drop in your hormone levels.<sup>[3]</sup> This means you may have more severe [symptoms](#) than women who go through the menopause naturally.

If you go through the menopause early, you may also be at a higher risk of having other health problems, such as heart disease and osteoporosis (a disease that makes your bones fragile so that they break easily). To find out more, see [Osteoporosis](#) and [Heart disease](#) .

If you have an early menopause, you may wish to consider [hormone replacement therapy](#) (HRT). HRT can relieve symptoms such as hot flushes, vaginal dryness, and feeling low. And the research tells us that it protects against osteoporosis and prevents fractures.<sup>[12]</sup> For women who have an early menopause, doctors normally prescribe HRT until they are about 50 years old, the age when the natural menopause normally happens.<sup>[13]</sup>

However, you need to weigh up the benefits of taking HRT against the risks. HRT increases your chances of getting breast cancer, blood clots, and strokes.<sup>[12]</sup> It's worth discussing alternative treatments with your doctor if you're mainly worried about bone loss during the menopause.<sup>[13]</sup>

For more details about treatments for symptoms of the menopause, see [What treatments work for the menopause?](#)

## Osteoporosis



Osteoporosis makes your bones become less solid.

Osteoporosis is a condition that affects your bones. It makes some bones, such as your hips and spine, weaker and more likely to break.

You may think of your bones as solid. But bone is constantly going through two processes. Old bone breaks down and new bone grows to replace it. <sup>[14]</sup> Osteoporosis happens when not enough new bone grows to replace the bone that is broken down. Gradually, the bones become less solid and your whole skeleton becomes weaker.

One study in England and Wales found that about half of women over the age of 50 years will have a fracture caused by osteoporosis. <sup>[15]</sup>

You may not even know you have osteoporosis until a bone breaks more easily than you may expect, especially a bone in your spine, wrist, or hip. Osteoporosis can also cause the bones in your spine to collapse, giving you a curved spine or hunched back.

Fractures can be painful. If you fracture your hip, for example, you may need major surgery. Some people become unable to live at home or look after themselves.

Bones naturally become thinner as you get older, whether you are a man or woman. But at the time of the menopause some women start to lose bone density a lot faster. This

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is because their bodies are making less of the hormone oestrogen. To find out more, see [Oestrogen: its special role](#) .

Lots of other things can put you at risk of having weak bones when you get older. They include smoking, not eating well, and not getting enough exercise. You may also be at risk if your mother had osteoporosis or if your diet was poor when you were a child.

But there are things you can do that may reduce your chance of getting weak bones.

- Eat foods rich in calcium. Calcium is a mineral that helps prevent bone loss. The most important sources are dairy products such as milk and cheese. It's also found in canned fish with bones such as sardines, and some vegetables like spinach and broccoli.
- In the UK, experts recommend an intake of 700 milligrams (mg) of calcium a day for adult women (apart from women who are breastfeeding, who are advised to have an extra 550 mg). In the US, women going through the menopause are advised to have 1,500 mg of calcium a day. <sup>[16]</sup>
- You may consider taking a calcium supplement. If you aren't getting all the calcium you need in your diet you can buy supplements from the pharmacist without a prescription. If you take a calcium supplement, you should take one that also contain vitamin D, as this helps your body absorb the calcium.
- Get enough vitamin D. This vitamin works with calcium to preserve bone strength. You get it mainly from sunlight. You can also get vitamin D from oily fish (sardines and mackerel) and vitamin D-enriched foods such as margarine and breakfast cereals.
- Do regular weight-bearing exercise. This is exercise that puts your bones under pressure, such as walking briskly, jogging, or exercising with weights. Research shows that, after you've been through the menopause, exercise can help keep your spine and hip bones strong. <sup>[17]</sup>
- Stop smoking and don't drink too much alcohol. Smoking can lead to weaker bones. <sup>[18]</sup> Drinking a small amount of alcohol doesn't seem to affect your chances of getting osteoporosis. There hasn't been much research on whether drinking a lot of alcohol increases your risk, but doctors recommend that you avoid drinking too much, just in case.
- Take a drug (other than hormone replacement therapy) to prevent bone loss. There are several of these available. Ask your GP for information.

You can also ask your doctor if you can have a **bone mineral density test** (also called X-ray absorptiometry or DEXA or DXA). This is a test that uses a weak X-ray to measure

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how strong your bones are for your age. It can tell you whether you're at risk of getting osteoporosis.

The test isn't widely available in the NHS. Women who may have osteoporosis and have already had a broken bone are most likely to be offered it. <sup>[19]</sup> But it's worth asking your doctor about it.

If you're at risk of osteoporosis, you may wish to consider taking [hormone replacement therapy](#) (HRT). There's good evidence that HRT can help prevent osteoporosis and stop you getting fractures. <sup>[12]</sup>

But you have to take HRT for a long time to help keep your bones strong. <sup>[20]</sup> And taking HRT has risks. It slightly increases your chances of having a stroke and of getting breast cancer, heart disease, and a blood clot in your lungs. <sup>[21]</sup>

Because of the risks, doctors now discuss other treatments to prevent bone loss, rather than offering HRT as a first choice. <sup>[22]</sup>

To read more, see our information on [Osteoporosis](#) .

### Risk of heart disease and strokes during the menopause

Once you reach the menopause, you may be more likely than before to get diseases that affect your heart, blood vessels, and circulation. These include the following.

- **Atherosclerosis.** This is when your **arteries** become hard and thick. It's caused by raised patches called plaques building up in the walls of the arteries. These raised patches are partly made of fat-like substances called low-density lipoproteins or **LDL cholesterol** . Atherosclerosis can block the flow of blood and cause a heart attack or a **stroke** .
- **High blood pressure.** If your **blood pressure** is too high, it increases your chances of having a stroke or getting heart disease.
- **Angina.** This is a pain in the chest that happens when the heart muscle doesn't get enough oxygen, usually because the blood supply is poor. This can happen if your arteries are narrowed by atherosclerosis.
- **A heart attack.** This happens when part of your heart muscle dies because it has no blood supply and is starved of oxygen. In most cases it is caused by atherosclerosis.
- **A stroke.** This is when part of your brain is damaged because the blood supply is cut off, or because blood leaks through the walls of blood vessels in the brain. Things

## Menopause

that can increase your chances of having a stroke include high blood pressure and atherosclerosis.

In 2001, more than 55,000 women in the UK died from heart disease. And almost 2 in 100 women had already had a heart attack. <sup>[23]</sup>

Before the menopause, women have a smaller chance of heart disease and strokes than men of the same age. Women tend to get heart disease and strokes about 10 years later, on average, than men. <sup>[24]</sup> Researchers aren't sure why this is but one theory is that the female sex hormone **oestrogen** helps protect women against heart disease during their childbearing years. <sup>[8]</sup> After the menopause a woman's risk of heart disease is about the same as a man's.

Researchers have found that women who have been through the menopause have twice the chance of getting heart disease as women who haven't, even when their different ages are taken into account. Researchers have also found that women who have had their **ovaries** removed have a greater chance of getting heart disease. <sup>[1]</sup>

Many other things affect your chances of getting heart disease or having a stroke after the menopause. They include the things you eat, whether you smoke, how much exercise you take, and whether anyone in your family has had heart disease or strokes. Women who don't smoke, who exercise regularly, and who have a healthy diet (high in fibre and low in saturated fats) are less likely to have heart disease and strokes.

So, if you want to protect yourself from these diseases: <sup>[25]</sup>

- Stop smoking
- Exercise regularly ( aerobic exercise such as brisk walking, running, and swimming is good for your heart)
- Watch your weight
- Cut down on saturated fats and trans fatty acids. Saturated fats are hard fats that come from dairy and animal products such as butter, milk, cheese, cream, and meat. Common sources of trans fatty acids are fried foods, cakes, and other baked goods
- If you have [high cholesterol](#) or [high blood pressure](#) , be sure to ask your doctor about treatments.

Taking hormone replacement therapy (HRT) will not protect you against heart disease. Researchers used to think that taking HRT containing oestrogen may lower your chance of heart disease. But large studies that included more than 20,000 women show that it doesn't. Women who took combined HRT (oestrogen and progesterone) for five years

## Menopause

were no less likely to have a heart attack than women who took a dummy treatment for comparison (a placebo).<sup>[12]</sup>

In fact, recent research shows that HRT slightly increases your chance of getting heart disease and having a stroke.<sup>[21]</sup>

See our page on [HRT](#) for more about these risks.

### Irregular periods and the menopause

You can get irregular periods at any time, but they may be a sign that the menopause is approaching. Your menstrual cycle may get shorter or longer. You may bleed for more days or fewer days. Your period may be lighter or heavier.

These changes are caused by your hormone levels. When these changes happen, it's often a sign that you are in the **perimenopause**, the stage leading up to the menopause.

But you should talk to your doctor if you have any of the following changes in your bleeding, because you may have another condition that needs treating.

- Your periods are very heavy (you need to change a tampon or pad every hour or two, you change your protection at night, or you have to wear both pads and tampons)
- Your periods last more than six days
- The time between your periods is shorter than 21 days from the start of one period to the start of the next
- You get bleeding or spotting between periods
- You bleed after having sex.

To find out more about the perimenopause, see [What is the menopause?](#)

### Hot flushes and the menopause

Hot flushes are the most common symptom of the menopause. About 8 in 10 menopausal women have them.<sup>[7]</sup>

If you have a hot flush, your face and upper body suddenly feel very hot and may go red. This can last from 30 seconds to several minutes. As the hot flush gradually fades you may feel shivery or faint.



## Menopause

Hot flushes vary in how often they happen and how intense they are. You may get them once or twice a week, a few times a day, or several times an hour.<sup>[1]</sup> You may get only a mild feeling of warmth or you may turn bright red and sweat.

For some women, hot flushes are only a minor nuisance. But others find them very distressing. Your work, sleep, and enjoyment of life can all be affected.

Hot flushes happen when there is an increase in the amount of blood flowing to your skin. The feeling of warmth or heat is caused by a rise in skin temperature. Your heart may beat faster and your blood pressure may also rise.<sup>[27]</sup> The chill that you feel afterwards happens because your body loses heat and your temperature drops when more blood flows to your skin.

Hot flushes usually start during the **perimenopause** (the time leading up to the menopause) and they often continue for several years. More than half of the women in one study had hot flushes in the two years before and after their last period.

Researchers don't know exactly why you get hot flushes.<sup>[27]</sup> One theory is that a drop in levels of the hormone oestrogen may affect the hypothalamus (the part of the brain that controls body temperature).<sup>[8]</sup>

You may also find hot flushes are triggered by things like stress, caffeine, spicy foods, hot drinks, or alcohol. Obviously it's best to avoid the things that trigger your hot flushes.

Your hot flushes may get worse as your body produces less oestrogen.<sup>[27]</sup> It's hard to predict how long they will last. You may have them for only a few months, or they may go on for years.<sup>[8]</sup> A quarter to half of women still have hot flushes five years after the menopause.<sup>[2]</sup>

### Night sweats during the menopause

Night sweats are hot flushes that you have while you're asleep. They're often bad enough to wake you up. This can make you feel tired and irritable, and it can make it difficult to concentrate during the day.<sup>[27]</sup>

Night sweats can also put stress on a relationship if your partner's sleep is also disturbed.

Apart from the menopause, other things such as a bad infection can also cause night sweats, so it's important to talk to your doctor if you get them.

## Problems sleeping during the menopause

Women often have problems sleeping when they're going through the menopause. You may wake up in the middle of the night because you have [night sweats](#) , and then you may have trouble getting back to sleep. You may have problems falling asleep. Or you may find that you wake up early in the morning. This can make you tired during the day.

Having problems sleeping when you're going through the menopause may be linked to the drop in levels of the hormone [oestrogen](#) . However, researchers still don't know exactly how this affects sleep patterns. It may be that oestrogen affects parts of the brain that regulate sleep. <sup>[27]</sup>

## Dry vagina and pain having sex during the menopause

The lining of your [vagina](#) becomes drier and thinner during the menopause. It makes less mucus (the fluid that keeps your vagina moist and healthy). This can cause dryness and itching. Because it is drier, your vagina is more at risk of becoming [infected](#) or [inflamed](#) , and the vaginal tissue is more likely to tear. <sup>[2]</sup>

If your vagina is dry you may find that sex is painful. The outside part of your sexual organs, called the [vulva](#) , may also become drier and thinner. These changes are caused by a drop in the levels of oestrogen that your ovaries make.

## Urinary problems and infections during the menopause

You may find you need to go to the toilet more often around the menopause. And you may be more likely to get [infections of your urinary tract](#) . (Your urinary tract carries urine from your kidneys through your bladder and out of your body.)

Some studies have also found a link between the menopause and a greater chance of urinary incontinence. <sup>[1]</sup> This is when you can't control when you urinate. Urine may leak out when you laugh or cough, or you may suddenly need to urinate.

Researchers think you get these problems when your [oestrogen](#) levels drop. This can make the lining of your bladder and your urethra thinner. (The urethra is the tube that drains urine from the bladder.) <sup>[1]</sup> Also, lower levels of oestrogen change the balance of [bacteria](#) in your vagina, and this can make urinary tract infections more likely. <sup>[28]</sup>

It's often difficult to talk about things like this with your doctor. Some women think that these problems are just a part of getting older. Many women don't go to their doctors for help. <sup>[29]</sup> Because of this, it's difficult to know how common these problems are. One

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study estimated that 10 percent to 40 percent of all women who have gone through the menopause have these symptoms.

### Losing interest in sex during the menopause

You may lose interest in sex when you go through the menopause, particularly if vaginal dryness makes sex uncomfortable or painful.<sup>[30]</sup> Having hot flushes or trouble sleeping also may affect how you feel about sex.

It seems that as women get older they have sex less often.<sup>[1]</sup> But it's not clear whether this is directly linked to the menopause. The vaginal dryness that happens because your body is making less oestrogen can make it harder for you to get sexually aroused. Some women find it harder to have an orgasm, and some say that orgasms are painful.<sup>[30]</sup>

If you're not interested in sex, this could be caused by things other than the menopause, such as a crisis in your relationship, retirement, or your children leaving home.<sup>[31]</sup> Or it may be to do with getting older.

We're not sure whether losing interest in sex is directly linked to the drop in oestrogen levels. Some researchers think it may be caused by your body making less of another hormone (called testosterone). Others say that oestrogen affects how you feel about sex, so that when levels of this hormone drop, it affects your sex drive.<sup>[31]</sup>

On the other hand, you may become more interested in sex during this time because you no longer have to worry about getting pregnant. This may make you more relaxed.

### Weight gain during the menopause

You may find that you put on weight in the years around the menopause. Some reports have found that women gain about half a kilogram (about 1 pound) per year during this time of their lives.<sup>[32]</sup>

Some studies have suggested that gaining weight is linked to the hormonal changes of the menopause, but this has not been proved. And changes in your weight could merely be part of getting older.

### Changes in your body during the menopause

Physical changes are common around the time of the menopause. You may put on weight around your waist or lose muscle. Your skin can become thinner and lose its

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elasticity so you get more wrinkles and lines.<sup>[8]</sup> Some women also have pain in their joints and muscles, and feel stiffer and less supple.

Researchers aren't sure whether these changes are linked to the changes in the levels of hormones that happen during the menopause, or whether they are just part of the general process of getting older.

### Feeling low or depressed during the menopause

Some women going through the menopause say that they feel low or depressed. Others say they have mood swings.<sup>[27]</sup> <sup>[33]</sup>

Some women say they feel:

- Irritable
- Anxious
- Less confident
- Panicky
- Forgetful
- Unable to concentrate
- Low in energy.

The changes many women go through at this time of life may also play a part in mood swings. You may feel less needed after your children have left home, or you may have to look after elderly parents. Things like this can make the changes that the menopause brings harder to deal with, especially if you are not sleeping well because of hot flushes or night sweats. Between one fifth and one third of menopausal women say they feel depressed.<sup>[33]</sup>

We don't know if these feelings are caused directly by the drop in levels of the hormone oestrogen that happens when you go through the menopause.

Some studies have found a link between the menopause and feeling depressed. But these studies tended to include women who went to the doctor for other reasons. So we can't be certain whether other problems made these women depressed. Different studies found no links between going through the menopause and feeling depressed.

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It may be that if you have been depressed before or if you used to get premenstrual tension, you may be more likely to feel depressed at this time. <sup>[27]</sup> <sup>[1]</sup> However, most women go through the menopause without feeling depressed. <sup>[27]</sup>

## Ways to take HRT

Here are the different ways you can take hormone replacement therapy (HRT).

- **Oestrogen only:** This treatment contains only an oestrogen and you take it every day. It is suitable only for women who have had an operation to remove their womb (called a hysterectomy)
- **Cyclical combined HRT:** This form of HRT combines an oestrogen and a progestogen in a way that copies the hormone levels in the menstrual cycle. You usually take oestrogen daily, with a progestogen added for the last 10 days to 14 days of each 28-day cycle. Most women have bleeding like a normal period, though often less heavy. Because of the monthly bleeding, this type of HRT is most suitable if you are just starting to go through the menopause. Not many women who are past the menopause want to go back to having regular periods.
- **Continuous combined HRT:** With this treatment you take an oestrogen and a progestogen every day, with no breaks. It's most suitable for women who have a womb and are past the menopause (they haven't had a period for at least 12 months). In women who are not yet past the menopause, this type of HRT may cause spotting and irregular bleeding.

## Different kinds of HRT products

You can take hormone replacement therapy (HRT) in several different ways. It comes as:

- Tablets
- Skin patches
- Gels you spread on your skin
- Implants (small pellets put just under your skin).

You can also get oestrogen creams, rings, and tablets (pessaries) that you put in your vagina.

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All these options mean that you can choose the product that's best for you. For example, you may prefer wearing an HRT patch to taking tablets. Hormones from the patch are absorbed gradually through your skin. When you take a tablet, the medicine goes first from your stomach and intestines to your liver, where it has to be broken down. This means you have to take a higher dose of oestrogen. On the other hand, some women find they can't use patches because their skin gets sore and irritated.

If your main symptom is vaginal dryness or pain having sex, or you have problems when you urinate, you may prefer to use a vaginal tablet, cream, or ring instead of a tablet you swallow or a patch. Doctors only prescribe these oestrogen products for vaginal dryness or problems urinating, not for other symptoms of the menopause. This is because, although these products have an effect on the vagina, not much oestrogen gets into the bloodstream, so they can't help with other symptoms.

Researchers aren't sure whether vaginal oestrogen products increase the risk of cancer of the lining of the womb when they are used for long periods. Oestrogen patches and tablets can increase your risk of this kind of cancer. Generally, doctors think vaginal HRT is unlikely to increase the risk. But you should use the lowest amount that works for your symptoms. As with all HRT products, you should have a check-up every year with your doctor. <sup>[41]</sup>

### How HRT is made

Oestrogen isn't just one hormone. There are three different oestrogens made by your body. They are **oestrone**, **oestradiol**, and **oestriol**.

Oestradiol is the strongest oestrogen and the most important before the menopause. It is also the oestrogen that's most often used in hormone replacement therapy (HRT) to treat symptoms of the menopause.

Oestriol and oestrone are also used in some types of HRT.

The oestrogens in HRT are made in different ways.

- Some are made from the urine of pregnant horses. These are called **conjugated oestrogens**. They're the oldest type of oestrogen used in HRT.
- Some are made from plants. These are called **esterified oestrogens**.
- Some are made in a laboratory. These are called **synthetic oestrogens**.

There are also lots of different **progestogens** used to treat symptoms of the menopause. Most of them are made in a laboratory.

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## Types of HRT

Here are some examples of the types of hormone replacement therapy (HRT) available in the UK. We've listed the names of the hormones used, then examples of brand names and the forms available.

### Combined oestrogen with progestogen

Types of oestrogen and progestogen	Brand name	What form it comes in
Conjugated oestrogen and medroxyprogesterone	Premique	Tablet
Conjugated oestrogen and norgestrel	Prempak-C	Tablet
Estradiol and drospirenone	Angeliq	Tablet
Estradiol and dydrogesterone	Femoston	Tablet
Estradiol and levonorgestrel	Nuvelle	Tablet
Estradiol and dienogest	Qlaira	Tablet

### Oestrogen

Type of oestrogen	Brand name	What form it comes in
Conjugated oestrogen	Premarin	Tablet
Estradiol	Elleste Solo	Tablet, patch
	Estraderm MX	Patch
	Estring	Vaginal ring
	Evorel	Patch
	Oestrogel	Gel
	Vagifem	Vaginal tablets

### Progestogen

Type of progestogen	Brand name	What form it comes in
Medroxyprogesterone	Provera, Adgyn Medro	Tablet

## HRT with oestrogen alone

In February 2004, a study of hormone replacement therapy (HRT) was stopped early because it showed that taking the type HRT that contains only oestrogen increases your chance of having a stroke .<sup>[42]</sup> <sup>[43]</sup>

The study included about 11,000 women. All of them had had an operation (a hysterectomy ) to remove their womb (uterus). Unlike women who still have their womb, women without a womb can take HRT that contains only an oestrogen. Women who still

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have their womb need to take oestrogen with progestogen. Taking only oestrogen increases their chances of getting a condition called endometrial hyperplasia, in which the number of cells in the lining of the womb increases. This condition isn't cancer, but it can turn into cancer if it isn't treated. <sup>[44]</sup>

- In the study, half the women took HRT with an oestrogen alone. The other half took a dummy treatment for comparison (a placebo). The researchers watched to see what happened to all the women over about seven years.
- Women who took oestrogen-only HRT were more likely to have a stroke than women who took a placebo, although, the increased risk was fairly small. <sup>[45]</sup> <sup>[46]</sup>
- Over seven years, about 3 in 100 women taking oestrogen-only HRT had a stroke. <sup>[43]</sup> <sup>[45]</sup> This compared with 2 in 100 women taking a placebo. This is about the same as the increased chance of a stroke from combined HRT (oestrogen and progestogen). <sup>[47]</sup>
- HRT with oestrogen alone didn't protect women against having a heart attack. But it didn't increase their chance of a heart attack either. <sup>[42]</sup>

Some research shows that HRT with oestrogen alone can increase women's chance of breast cancer. <sup>[48]</sup> But your chance of getting breast cancer returns to normal five years after you stop HRT.

But not all the research agrees. Another study found that the risk of breast cancer is smaller with oestrogen-only HRT than with combined HRT. <sup>[49]</sup>

A later study looking at oestrogen-only HRT found that it didn't cause any extra breast cancers after seven years. <sup>[50]</sup>

However, women in this study who took oestrogen-only HRT were more likely to have an abnormal mammogram than women who took a placebo. They were also more likely to have a biopsy (when doctors remove some breast tissue and check it under a microscope). <sup>[50]</sup>

This research suggested that HRT with oestrogen alone doesn't increase the chance of breast cancer, but it may increase anxiety in women because of the need for more mammograms and biopsies.

Until there is more good-quality research into the effects of oestrogen-only HRT we cannot be sure how it affects the risk of breast cancer.



## Breast cancer and HRT

Studies show that taking hormone replacement therapy (HRT) can slightly increase the chance of breast cancer. Here's what the research tells us.

- Taking combined HRT (oestrogen plus progestogen) increases your chances of getting breast cancer. <sup>[51]</sup> <sup>[48]</sup>
- The risk is a little higher for women over 60 who take HRT than for women under 60 years of age. <sup>[51]</sup>
- If 1,000 women in their 50s took HRT for five years, it would cause around three extra cases of breast cancer. <sup>[51]</sup> For 1,000 women in their 60s, there would be an extra four cases of breast cancer.
- Your risk goes up the longer you use HRT. <sup>[48]</sup> <sup>[89]</sup> It goes up slowly in the first five years you use HRT and then more quickly if you use HRT for longer.
- Five years after stopping HRT, your chance of getting breast cancer is the same as that of a woman who never took HRT. <sup>[48]</sup>
- Some studies have found that taking oestrogen-only HRT may also increase your chance of breast cancer. <sup>[51]</sup> <sup>[48]</sup> But not all the research agrees. One study found that there was no increased risk. <sup>[50]</sup> To find out more, see [HRT with oestrogen alone](#) .

One large study was stopped early after finding that combined HRT increased the chance of breast cancer, but this increase was relatively small. <sup>[81]</sup> Here's what the study found.

- Over the course of about five and a half years, nearly 3 in 100 women taking combined HRT got breast cancer. <sup>[90]</sup>
- A little over 2 in 100 women who took a dummy treatment for comparison (a placebo) got breast cancer. <sup>[90]</sup>
- The breast cancers of the women who took combined HRT were larger and more likely to spread. <sup>[90]</sup>

How big your overall chance of breast cancer is depends on you as an individual. If you have a mother or sister who had breast cancer, for example, you may already have a greater chance of getting this disease.

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We don't know if these risks are the same for women who take oestrogen-only HRT, rather than oestrogen combined with a progestogen. Researchers are still looking into this.

### Blood clots and HRT

Blood clots are one of the most serious problems linked to taking hormone replacement therapy (HRT), but the increased chance is very small for most women.

When you get clots in your blood, doctors say you have **thromboembolic disease**. Although it isn't dangerous in itself, it can become life threatening if a clot travels through your blood and blocks an important blood vessel. If a clot stops blood getting to your lungs, it is called a **pulmonary embolism**, which can kill you.

Researchers have found that women who take HRT are twice as likely to develop thromboembolic disease as women who don't take HRT. <sup>[79]</sup> However, the risk of thromboembolic disease is small to begin with, so the increased risk for women who do use HRT is still not very big. <sup>[51]</sup> <sup>[21]</sup> In one large study: <sup>[21]</sup>

- Over a period of about five years, less than 1 in 100 women taking HRT got a blood clot in their lungs
- This was about twice the number of women who got this type of blood clot when taking a dummy treatment (a **placebo**) for comparison.

A big review of the studies found that the chance of blood clots was increased for women taking combined HRT tablets (oestrogen and progestogen) and for women taking oestrogen-only HRT tablets. <sup>[91]</sup> But women who took HRT in the form of patches had no increased chance of blood clots.

If you've had blood clots before, you should let your doctor know and talk about whether HRT is suitable for you.

### Endometrial cancer and HRT

If you still have your womb (uterus) and you take oestrogen-only hormone replacement therapy (HRT), your chance of getting cancer of the womb lining (endometrial cancer) is greater.

Researchers think this happens because oestrogen encourages the cells in the lining of the womb to grow. This is why doctors always give women who still have their womb a combination of oestrogen and progestogen. Adding a progestogen stops the oestrogen stimulating the lining of the womb. Research shows that women who take HRT containing

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oestrogen and progestogen have the same chance of getting endometrial cancer as women who don't take HRT. <sup>[51]</sup> <sup>[87]</sup> If you've had a hysterectomy, you can't get endometrial cancer because you don't have a uterus, so you can take HRT with oestrogen alone.

When women take HRT, doctors also look out for a condition in which the number of cells in the lining of the womb increases. (This is called **endometrial hyperplasia**.) This condition isn't cancer, but it can turn into cancer if it isn't treated. We found two reviews of the research that found that women who took combined HRT were no more likely to get this condition than women who took a dummy treatment (a placebo). <sup>[78]</sup> <sup>[92]</sup>

Other research has found that, if you need to take HRT for a long time, you're less likely to get endometrial hyperplasia if you use a continuous combined product rather than a cyclical product. <sup>[51]</sup> A cyclical product copies your natural cycle and gives you a period. A continuous product provides a steady supply of hormones with no break or periods. See [Ways to take HRT](#) to learn more.

### Strokes and HRT

Large studies have shown that women who take combined hormone replacement therapy (oestrogen plus progestogen) or HRT with oestrogen alone are slightly more likely than other women to have a stroke. <sup>[93]</sup> <sup>[47]</sup> The risk is higher for women over 60 years of age. <sup>[51]</sup>

The research shows that: <sup>[47]</sup>

- If 2 in 100 women **not** taking HRT will have a stroke, then
- 3 in 100 women taking HRT will have a stroke.

The risk is for a type of stroke called an **ischaemic stroke**. <sup>[47]</sup> This is the type of stroke that happens when the blood supply to part of the brain is cut off. Women taking HRT were likely to have a worse stroke than those not taking HRT. HRT may not increase the chance of the type of stroke that happens when blood leaks through the walls of blood vessels (a **haemorrhagic stroke**), but we can't be sure.

### Heart disease and HRT

A large study found that women on combined hormone replacement therapy (oestrogen plus progestogen) have an increased chance of heart disease. <sup>[21]</sup> But the risk is small to begin with. Over the course of about five years:

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- Nearly 20 in 1,000 women taking HRT developed heart disease
- About 15 in 1,000 women taking a dummy treatment (a placebo) did.

But when researchers looked more closely at these figures they found that the only women who had a greater chance of heart disease were those aged over 60 who had taken HRT for more than 10 years after the menopause.<sup>[82]</sup> Women under 60 who took HRT within 10 years of the menopause did not seem to have an increased chance of heart disease.

Longer-term follow-up from the same study showed that the chance of heart problems dropped back to normal after women stopped taking HRT.<sup>[83]</sup> In the two or three years after stopping treatment, there was no difference in the chance of heart disease between women who took HRT and women who took a placebo.

There's some evidence from one study that women with a healthy cholesterol level are less likely to get heart problems while taking HRT than those whose cholesterol level is raised.<sup>[94]</sup>

## Glossary:

### vagina

This is the passage from a woman's womb (uterus) to the outside of her body.

### urinary tract infection

A urinary tract infection (UTI) happens when bacteria invade the walls of your urinary tract, which includes your kidneys, bladder and urethra. An uncomplicated UTI is one that involves your bladder and urethra, but not your kidneys. A complicated UTI involves your kidneys and can be harder to treat. Doctors may refer to a kidney infection as pyelonephritis.

### 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.

### infection

You get an infection when bacteria, a fungus, or a virus get into a part of your body where it shouldn't be. For example, an infection in your nose and airways causes the common cold. An infection in your skin can cause rashes such as athlete's foot. The organisms that cause infections are so tiny that you can't see them without a microscope.

### 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.

### ovaries

Women have two ovaries, one on each side of their womb. They are small glands that store eggs. Inside the ovaries are hundreds of thousands of pre-eggs, called follicles. Some of these grow into eggs.

### oestrogen

Oestrogen is the name given to three female sex hormones: oestradiol, oestrone and oestriol. Oestrogen causes women's sexual development during puberty: it is needed to develop breasts, have periods and get pregnant. Oestrogen is also thought to affect women's health in other ways. It may influence their mood, cholesterol levels and how their bones grow. Men have very low levels of oestrogen in their bodies, but doctors aren't completely sure what it does. Oestrogen is an important ingredient in most types of contraceptive pill and hormone replacement therapy.

### progesterone

Progesterone is a hormone that plays a part in a woman's menstrual cycle and in pregnancy. A form of this hormone made in the laboratory, called progestogen, is often added to contraceptive pills and hormone replacement therapy (HRT).

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## puberty

Puberty is the time when boys and girls develop secondary sexual characteristics. For boys, the major changes include pubic hair, a deeper voice, and growth of their penis and testicles. For girls, major changes include pubic hair, breasts and starting to have periods. After puberty, girls are able to become pregnant and boys are able to father children.

## fallopian tubes

Fallopian tubes are the two tubes that come out of the top of a woman's womb. They carry eggs from the ovaries to the womb.

## polyp

A polyp is a growth that is found inside your body.

## cervix

The cervix is a piece of tissue that sits between a woman's womb and her vagina. It has a small opening in it that gets much bigger when a woman is having a baby.

## fibroid

A fibroid is a lump of extra tissue that can build up in the wall of the womb. Sometimes it can grow big enough to feel. It can cause pain and bleeding, and make it difficult for a fertilised egg to take hold in your womb. If these problems become too bad, you can have fibroids removed by surgery.

## adrenal glands

You have two adrenal glands. They are on top of your kidneys. Your adrenal glands make hormones that help control your blood pressure, how fast your heart beats and the way your body uses food.

## ovulation

To get pregnant, a woman needs to release an egg from one of her ovaries. This is called ovulation. It normally happens once every month. During ovulation, the egg leaves the ovary and moves towards the womb.

## hysterectomy

A hysterectomy is an operation to take out a woman's womb (also called her uterus). Sometimes the ovaries and fallopian tubes are removed as well.

## radiotherapy

This is also called radiation therapy. It is a treatment that uses high-energy X-rays to kill cancer cells. It's most often used for tumours that are hard to treat with surgery alone. You won't feel any pain during this treatment, but you may get some side effects afterwards.

## mumps

Mumps is a childhood infection caused by a virus. Often you can have the virus without having any symptoms. But sometimes it can give you swelling in the glands under your mouth and in other parts of your body. The measles, mumps and rubella (MMR) vaccine protects children from getting mumps.

## rheumatoid arthritis

If you have rheumatoid arthritis, your joints get painful, swollen, and stiff. Rheumatoid arthritis is caused by inflammation inside your joints. It happens when your immune system attacks the lining of your joints.

## 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.

## osteoporosis

Osteoporosis is when your bones get too brittle. It happens if not enough new bone tissue is growing to keep bones strong. If you have osteoporosis, the bones in your body may break easily.

## X-ray

X-rays are pictures taken of the inside of your body. They are made by passing small amounts of radiation through your body and then onto film.

## arteries

Arteries are the blood vessels that take blood that is rich in oxygen and food away from your heart. The arteries carry this blood to all the tissues in your body.

## LDL cholesterol

Cholesterol is a fatty substance in your blood. You can get it from food and it is also made by your liver. Having a lot of cholesterol in your blood can cause health problems. LDL cholesterol is often called 'bad' cholesterol. It can build up in your arteries and increase your risk of heart disease. LDL stands for low-density lipoprotein.

## 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.

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## blood pressure

Blood pressure is the amount of force that's exerted by your blood on to your blood vessels. You can think of it like the water pressure in your home: the more pressure you have, the faster and more forcefully the water flows out of the shower. Blood pressure is measured in millimetres of mercury (written as mm Hg). When your blood pressure is taken, the measurement is given as two numbers, for example 120/80 mm Hg. The first, higher, number is called the systolic pressure, and the second, lower, number is the diastolic pressure. The systolic number is the highest pressure that occurs while your heart is pushing blood into your arteries. The diastolic number is the lowest pressure that happens when your heart is relaxing and is not pushing your blood.

## aerobic exercise

Aerobic exercise means any exercise that causes your body to use more oxygen than normal. Any exercise that makes your heart rate and breathing rate increase is aerobic. Examples of aerobic exercise include cycling, running and swimming.

## hormone replacement therapy

Hormone replacement therapy (also called HRT) is given to women after the menopause to replace the oestrogen (the main female hormone) that is no longer made by their ovaries. It can be given either as oestrogen alone or as a combination of oestrogen and progesterone (another female hormone). It is useful to treat menopausal symptoms such as hot flushes, and to prevent brittle bone disease (osteoporosis). But there are concerns that it may increase the risk of breast cancer, heart attacks and strokes.

## 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 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.

## inflammation

Inflammation is when your skin or some other part of your body becomes red, swollen, hot, and sore. Inflammation happens because your body is trying to protect you from germs, from something that's in your body and could harm you (like a splinter) or from things that cause allergies (these things are called allergens). Inflammation is one of the ways in which your body heals an infection or an injury.

## vulva

The vulva is the outside part of a woman's genitals. This includes the labia, the clitoris and the vaginal opening, called the vestibule.

## bacteria

Bacteria are tiny organisms. There are lots of different types. Some are harmful and can cause disease. But some bacteria live in your body without causing any harm.

## testosterone

Testosterone is a sex hormone. When boys go through puberty, testosterone causes the development of male characteristics like a deep voice and a muscular body. Testosterone is also known to affect men's sex drive and mood. Although testosterone is thought of as a 'male hormone', women also make testosterone (although they make much less of it than men).

## cholesterol

Cholesterol is a fat-like substance made by your liver or absorbed from food. It is used by your body to make bile acids (which help your intestines absorb nutrients) and steroid hormones (like testosterone or oestrogen). Cholesterol is also an important part of cell membranes, which are the structures that surround cells. 'Good cholesterol' is called HDL; 'bad cholesterol' is LDL.

## blood clot

A blood clot forms when the cells in blood clump together. Sometimes this happens to stop you from bleeding if you've had an injury. But it can also happen on the inside of your blood vessels, even when you haven't had an injury. A blood clot inside a blood vessel is called a thrombus.

## 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'.

## neurotransmitters

Neurotransmitters are chemicals that help to carry messages between nerve cells. Serotonin, dopamine, and norepinephrine (noradrenaline) are all neurotransmitters.

## pulmonary embolism

A pulmonary embolism can give you chest pain, make you feel breathless and uncomfortable or make you breathe rapidly. A pulmonary embolism is dangerous and can kill you if it is not treated.

## systematic reviews

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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.

## meta-analysis

A meta-analysis puts together the results of a number of studies. A meta-analysis is used if individual studies are too small for any definite conclusions to be drawn about a treatment. Pooling together results from a number of studies may help say for sure what the effects of the treatment are.

## HDL cholesterol

Cholesterol is a fatty substance in your blood. You can get it from food and it is also made by the liver. Having a lot of cholesterol in your blood can cause health problems. But HDL cholesterol is sometimes called 'good' cholesterol, because it may lower the risk of heart disease. HDL stands for high-density lipoprotein.

## liver

Your liver is on the right side of your body, just below your ribcage. Your liver does several things in your body, including processing and storing nutrients from food, and breaking down chemicals, such as alcohol.

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