

Patient information from the BMJ Group

Fertility problems

In this section

[What is it?](#)

[What are the symptoms?](#)

[How is it diagnosed?](#)

[How common is it?](#)

[What treatments work?](#)

[What will happen?](#)

[Questions to ask](#)

Fertility problems

If you and your partner have been diagnosed as having fertility problems, it means you've been trying for a baby for at least a year without success. It doesn't mean you'll never be able to have a baby. Infertility is very common and there are treatments that can help.

We've brought together the best research about infertility 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 infertility?

If you and your partner have been diagnosed as having fertility problems, it means you've been trying for a baby for at least a year without success. It doesn't mean you'll never be able to have a baby. There are no guarantees, but there are treatments that can help.



Being unable to have a baby can be upsetting and demoralising but there are treatments that can help.

Fertility problems

If you've been trying for a baby for at least a year, your doctor may suggest some tests to find out what the problem is. You can get help whether or not you've had a child before. ^[1]

Being unable to have a baby is hard to cope with. Tests and treatments for infertility can be a strain, both physically and emotionally. It may help you and your partner to talk to a [counsellor](#) .

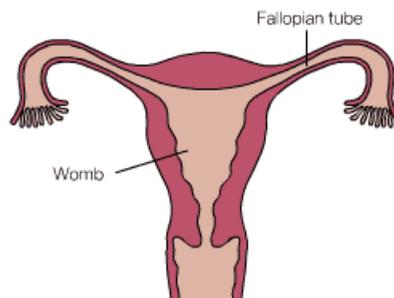
See [How infertility can make you feel](#) .

Key points about infertility

- Infertility is very common. In the UK, about 1 in 7 couples seek medical help to have a baby. ^[4]
- The most common causes in women are ovulation problems and damaged or blocked tubes.
- The most common causes in men are a low sperm count and poor-quality sperm.
- In one quarter of infertile couples, doctors can't find a reason for the infertility.
- To improve your chances of getting pregnant, you should have sex at least every two or three days. ^[1]
- If you're a woman aged 35 or older and you're having problems getting pregnant, don't wait more than a year before you go for help. Many treatments don't work so well when a woman is older.

How you get pregnant

It's useful to know a little about how a pregnancy normally begins. This can help you understand what can go wrong.



The fertilised egg has to travel down the fallopian tube and embed (plant itself) in the woman's womb.

Fertility problems

To get pregnant:

- The woman has to produce an egg
- The man has to produce healthy sperm
- The egg has to travel from the woman's ovary into her fallopian tube
- The sperm have to swim up through the vagina and womb, into the fallopian tube to meet the egg
- The egg has to be fertilised by the man's sperm
- The fertilised egg has to travel down the fallopian tube and embed (plant itself) in the woman's womb.

To find out more, see [Getting pregnant: the woman's role](#) and [Getting pregnant: the man's role](#).

More than 8 in 10 couples trying to get pregnant are successful within one year, if they have regular unprotected sex and the woman is under 40 years of age. And more than 9 in 10 couples get pregnant within two years. ^[5]

How egg and sperm join together

When a man ejaculates inside a woman, one of his sperm may fertilise the egg. Here is what happens: ^[6]

- The man's semen (containing sperm) gets pushed up into the vagina
- About 1 percent of sperm (that's about 400,000) swim up to the cervix, the neck of the womb. The rest die or fall out of the vagina
- If a woman is in her fertile period, the mucus is thin and watery, helping the sperm swim up to the fallopian tubes
- If there is an egg inside one of the tubes, the sperm try to push through the egg wall
- The first one through will fertilise the egg
- The genes from the egg and sperm combine inside a single cell.

After fertilisation

- The fertilised egg moves down the fallopian tube to the womb. This takes several days.

Fertility problems

- It starts growing and embeds in the lining of the womb, called the endometrium.
- Now it's called an embryo. It forms the placenta to get food from its mother. It's only at this stage that pregnancy has started.
- The placenta makes a special hormone to make the lining of the womb thicken. The hormone also prevents the woman having her period.

When to have sex

A woman is most likely to get pregnant (most fertile) from four or five days before she ovulates until up to a few hours afterwards. This is the likeliest time that the sperm will fertilise an egg.

Many couples who are trying for a baby concentrate on having sex around this time. There are various ways you can work this out. Some women use special hormone kits from a pharmacy. Other women take their temperature or check the fluid in their vagina. This fluid tends to be thin and stretchy when she is fertile.

Still, it's easy to miss the most fertile time of the month. The length of a woman's menstrual cycle can vary and some women ovulate earlier in their cycle than others. So it's very difficult to be precise, even if you are using hormone kits. Having sex by the calendar can also be stressful and disappointing.

For these reasons, doctors usually advise couples not to try to have sex at certain times of the month, but instead to have sex every two to three days.^[5] That way, you're less likely to miss the time that you are ovulating.

What can go wrong

There are many reasons why a couple may find it hard to get pregnant. Either or both partners may have a problem that doctors can identify with tests. Figures show:^[7]

- In 3 in 10 infertile couples, the man has a problem.
- In about 4 to 5 in 10, the woman does.
- In about 4 in 10 couples, both partners have a problem.

Sometimes, doctors can't work out why you're finding it hard to get pregnant. This is called [unexplained infertility](#) and it happens to about 2 to 3 in 10 couples.

Problems getting pregnant: the woman

Here are the most common problems that stop a woman getting pregnant.^[8]

- [Problems ovulating](#) : This means that your ovaries are not releasing eggs at all or only releasing eggs occasionally.

Fertility problems

- [Early menopause](#) : Menopause is when your ovaries stop releasing eggs.
- [Low hormone levels](#) : A small number of women make too little or none of the two hormones that make ovulation happen.
- [Damaged or blocked fallopian tubes](#) : If your tubes are damaged or blocked, eggs won't be able to travel down the tubes, and sperm won't be able to travel up them.
- [Endometriosis](#) : This is when the cells that normally grow in the lining of the womb (the endometrium) also grow in other places, such as around the ovaries and fallopian tubes.
- [Fibroids](#) : These are large growths some women have in their womb.

Problems getting pregnant: the man

Here are the most common reasons why men have fertility problems. ^[8] ^[9]

- [Problems with sperm](#) : This can mean too few sperm, abnormally-shaped sperm, or sperm that don't swim well.
- [Problems getting sperm to the right place](#) : A man may not be able to get an erection, for example, or have problems releasing sperm from his penis.
- [Sperm antibodies](#) : Rarely, a man produces antibodies that destroy or damage his sperm.

Fertility problems: why us?

Things that lower your chances of getting pregnant are called **risk factors**. Here are the main risk factors for infertility.

Getting older

A woman's chances of getting pregnant start to fall in her early to mid-30s, and fall quite a lot over the age of 40. This may be because she isn't ovulating so often. Also as you get older your eggs change in quality. They may be more difficult to fertilise. And problems such as [blocked tubes](#) and [endometriosis](#) are more common in older women. ^[20]

Both eggs and sperm are more likely to have defects as couples get older. This can increase your chances of having a miscarriage.

Nowadays, it's quite common for women to start trying for a baby at an older age. Couples tend to get together or marry at a later age, and may not be ready to start a family until the woman is in her mid-30s or older.

Fertility problems

That's one of the reasons why more couples are seeking help for infertility. Being older may make it harder to get pregnant. But it doesn't mean it can't happen.

Smoking

Men and women who smoke are more likely to have problems getting pregnant than people who don't smoke.^[21] Couples who smoke take longer to get pregnant and are more likely to miscarry.

Cigarette smoke damages women's ovaries so they make less oestrogen. And the eggs of women who smoke are more likely to have genetic abnormalities. Female smokers are more likely to have an early [menopause](#) .

Men who smoke heavily (one or two packs per day) are more likely to have [abnormal sperm](#) than non-smokers.^[21] Their sperm may be misshapen and not move properly.

To find out the best way to give up smoking, see our articles on [nicotine addiction](#) .

Alcohol and drugs

Alcohol, cocaine, heroin, and methadone can all lead to male infertility. They all affect a man's ability to get an erection and to ejaculate.

Women are advised to drink no more than one or two units of alcohol once or twice a week when trying to get pregnant. Alcohol may damage the unborn child. The same applies to other drugs.

Being overweight or underweight

Women who are very athletic and women who have eating disorders (such as [anorexia](#) or [bulimia](#)) have low levels of body fat. This may mean they may not [ovulate](#) every month.^[20]

Women who are overweight or underweight can have an imbalance of [hormones](#) that increases the risk of infertility.^[20] To find out more about fertility problems and being overweight, see [Fertility treatments and your weight](#) .

Testicles too warm

If a man's testicles are too warm, sperm may not grow correctly.

This can happen if a man wears underpants that are too tight. Or it may happen in men with certain jobs, such as long-distance lorry drivers.

Illness and infertility

Some illnesses affect your chances of having a baby.^[22] ^[8]

Fertility problems

Undescended testicles

In some newborn baby boys, their testicles have not descended from inside the abdomen. If this happens to both testicles and it isn't treated, it may later make the man infertile. If only one testicle is affected, he may still produce sperm but he may have a low sperm count. There is an operation to bring down undescended testicles. Doctors normally carry this out at a young age because they think it improves a man's chances of having children later in life.

Cystic fibrosis

Cystic fibrosis is an inherited disease. Some men with cystic fibrosis have sperm which do not move properly, while others are born without the tubes through which sperm travel from the testicle. But they do still make sperm, which can be used with a treatment called [ICSI](#). Cystic fibrosis sometimes affects a woman's chances of getting pregnant.

Mumps

Mumps is an infection that can damage a man's testicles. Make sure you're vaccinated against mumps.

Diabetes

Diabetes can cause several problems for men that can affect their chances of having children.

Other illnesses

There are some rare genetic problems that can affect your chances of getting pregnant.

Radiation or dangerous chemicals

Radiation or some hazardous chemicals can cause fertility problems in both men and women. And they can cause birth defects in children whose parents are exposed to them. Some chemicals reduce sperm count or cause misshapen sperm that don't move well. ^[20]

But there are regulations to prevent people being exposed to hazardous chemicals.

What are the symptoms of infertility?

The obvious symptom of infertility is that you can't get pregnant when you want to.

Your doctor will be looking for clues why. He or she may ask personal questions that you may find upsetting or embarrassing. Be as open and honest as you can. This will make it easier to find out why you are having a problem.

Below are some of the things that may help explain why you haven't been able to get pregnant.

Fertility problems

No periods or irregular periods

If you don't have a period roughly every four weeks, it may mean that the **hormones** that control your menstrual cycle are not working properly. So you may not be ovulating regularly. You'll need hormone tests.

See [What happens every month](#) to find out more about hormones and your menstrual cycle.

Painful or heavy periods

This may mean there is:

- Something wrong with the lining (endometrium) of your womb
- A benign (non-cancerous) growth in your womb, such as a **fibroid** or polyp
- Tissue of the same type as the lining of the womb growing in other places. This is called [endometriosis](#) .

Painful sex

Sex can be painful for lots of different reasons. Some of them affect your fertility. For example, endometriosis can be painful for women during sex, bowel movements or when passing urine. Endometriosis is often found in women who have trouble getting pregnant.

Loss of sex drive

Trying to get pregnant can be stressful for both of you, especially if you're having sex when you don't feel like it. This can lead to you both losing interest in sex. If you're not having sex frequently, it may lower your chances of getting pregnant. Discuss it with your doctor.

Problems ejaculating

You may have a climax during sex but nothing comes out. This is called **retrograde ejaculation** and it's rare if you haven't had surgery. It means semen is going into your bladder (the sac that holds your urine) instead of your penis. Normally, the neck of the bladder closes during sex to prevent semen getting into it. But if there is damage to the nerves the bladder may not close fully, allowing semen to get inside. Nerve damage can happen if you have **diabetes** , or after surgery.

How do doctors diagnose fertility problems?

If you and your partner have been trying unsuccessfully for a baby, the first step in getting help is to see your GP. It helps if you go together.

Your GP will want to ask you both some questions (this is called taking a history), do a physical examination, carry out some tests and give you some advice. ^[5]

Fertility problems

Questions your doctor may ask

You'll probably both be asked about:

- How long you've been trying to get pregnant.
- How often you have sex and if there are any difficulties with sex. To get pregnant you should have sex at least every two or three days, every week, rather than trying to have sex around the time a woman ovulates.
- Guidelines in the UK say that you are infertile if you haven't had a baby after trying for two years. ^[5] However you may be able to get help after one year, especially if the woman is over 35 or if there is an obvious problem causing your infertility, like irregular periods in the woman, for example.

If you're a woman you'll probably be asked about:

- Your periods and whether they are regular
- Contraception: What you have used and how long ago you stopped using it
- Previous pregnancies (if you have had any) and whether there were problems
- Sexually transmitted diseases such as **chlamydia** or **gonorrhoea**
- Any other diseases or illnesses you might have had
- Surgery in your pelvic area
- What medicines you are taking, if any (some drug treatments can affect your fertility)
- Your lifestyle: You may be asked, for example, whether you smoke, whether and how much you drink or take drugs, whether you travel in your job (this can restrict the chances of sex with your partner), and whether you are under stress.

If you're a man you may be asked about:

- Whether you have any children (with the same or a different partner)
- Whether you have ever had mumps (this can affect your fertility)
- If you have had any sexually transmitted diseases such as **chlamydia** or **gonorrhoea**
- Whether you have had problems with your testicles, with having sex, getting an erection or having a climax (ejaculating)

Fertility problems

- Any diseases or illnesses you might have had
- What medicines you are taking, if any (some drug treatments can affect your fertility)
- Your lifestyle. You may be asked, for example, whether you smoke, drink, travel a lot (this can restrict the chance of having sex with your partner), take drugs, or are under stress.

Having a physical examination

Your GP will probably give you and your partner a general medical examination that includes measuring your height, weight and **blood pressure**. He or she may take some routine blood tests.

Tests

Your doctor will also arrange for you to have some tests to check:

- Whether you're ovulating regularly if you're a woman
- What your sperm look like and how many there are if you're a man.

For more about these tests, see [Fertility tests: the first round](#).

If these first tests show that the woman is ovulating normally and her partner's sperm is normal, the woman is likely to be advised to have [further tests](#) to check for any problems with her ovaries, **fallopian tubes**, and womb.

Advice

Your GP will also give you some general advice about getting pregnant. You may be advised, for example, to stop smoking, cut down on alcohol, eat a healthy diet, or lose weight if you are very overweight (**obese**).

You may also be told about the kind of investigations and treatments for infertility that you could have.

Seeing a specialist

Your GP will usually refer you to a specialist if you have been trying to have a baby for one year without success. You may be referred sooner if:^[5]

- The woman is aged 36 years or over
- Either of you has a known cause of infertility, or has had symptoms suggesting a cause of infertility.

Fertility problems

Your doctor may first refer you to a hospital infertility clinic. Later you may be referred to a clinic which carries out in vitro fertilisation (IVF). IVF clinics are licensed by the Human Fertilisation and Embryology Authority. The Authority can give you a list of these clinics, tell you what treatments they offer and how successful they are.^[5] How soon you can see a specialist on the NHS is likely to depend on where you live. Some parts of the country spend more on NHS fertility treatment than others. You may decide to pay for part or all of your treatment so that you can have it sooner.

When you see a specialist at a fertility clinic, he or she will examine you. You may also be advised to have further tests to find out more about your infertility. See [Further fertility tests](#) .

How common are fertility problems?

Fertility problems are very common.

About 1 in 7 couples in the UK have a problem getting pregnant.^[5]

- About 2 to 3 in 10 couples don't find out the cause.
- About 3 in 10 women have a problem with ovulating.
- About 2 in 10 men have a low sperm count or quality.
- Between 1 and 2 in 10 women have damaged fallopian tubes.
- About 1 in 20 women have endometriosis.
- In about 4 in 10 couples, both the man and the woman have a problem.

Infertility doesn't seem to be increasing. But more couples may be seeking help than in the past because there are now so many treatments that can help them.

And more couples now delay starting a family until later. If you're older, getting pregnant becomes more difficult. This is especially so for women over 35.^[5]

If you're having problems and the woman is 35 or older, don't delay seeking help. The sooner you have treatment, the better your chances of getting pregnant.

There have been many studies suggesting that men's sperm counts are lower than they were in the past and that this could be causing more infertility in men. Researchers aren't sure why sperm counts might be lower but some suspect this could be caused by pollution in the environment. But this is only a theory.

One thing that could be causing more infertility in women is the increase in sexually transmitted diseases (STDs) such as chlamydia. This can lead to pelvic inflammatory disease (PID), a major cause of illness in young women.^[5]

Fertility problems

See [Pelvic inflammatory disease](#) to read about how you can prevent it.

What treatments work for infertility?

If you and your partner have been diagnosed as having fertility problems, it means you've been trying for a baby for at least a year without success. It doesn't mean you'll never be able to have a baby. There are no guarantees, but there are treatments that can help, whatever the problem.

Key points about treating infertility

- Treatments for infertility include hormones, surgery, and assisted reproduction treatments such as in vitro fertilisation (IVF).
- Some couples may need only one type of treatment to get pregnant, but others will need to try more than one. It's worth weighing up the strain of some fertility treatments and the risk of possible side effects against the chances of success.
- Bear in mind that if you get pregnant you may still miscarry. As many as 1 in 5 couples who get pregnant with or without infertility treatment have a miscarriage. This can be very upsetting, especially if you've been trying to get pregnant for a long time. Treatment for infertility doesn't make a miscarriage less likely. The older the woman, the greater the chance of miscarriage.

Recently, doctors have been advised not to give fertility treatments to women who are very overweight (obese) unless they lose weight. To find out more, see [Fertility problems and your weight](#).

Treatments for infertility

What treatments you're offered will depend on what is causing your infertility. Sometimes, doctors don't know why a couple can't get pregnant. This is called unexplained infertility. To read more about the types of infertility, see [What is infertility?](#)

- [Treatments for women with problems ovulating](#) : If you can't get pregnant because you have problems ovulating, it means that your ovaries are either not releasing eggs at all or not releasing them regularly. [More...](#)
- [Treatments for women with blocked or damaged tubes](#) : About 15 in 100 women who haven't been able to get pregnant have damaged or blocked fallopian tubes. These are the tubes that connect your ovaries to your womb. [More...](#)
- [Treatments for women with endometriosis](#) : About 1 in 20 women who can't get pregnant have a condition called endometriosis. This is a disease of the lining of the womb. The lining is called the endometrium. [More...](#)

Fertility problems

- [Treatments for male infertility](#) : Men with fertility problems may have too few sperm (a low sperm count), abnormally shaped sperm or sperm that don't swim well. Sometimes men are unable to get their sperm into their partner's vagina. [More...](#)
- [Treatments for unexplained infertility](#) : Sometimes, doctors can't work out why a couple is finding it hard to get pregnant. But treatments can still help. [More...](#)

Other treatments for infertility

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

- [Frozen embryos and eggs](#) : This is called cryopreservation. [More...](#)
- [Pre-implantation genetic diagnosis](#) : This may be used if you or your partner has a genetic disease. [More...](#)
- [Donor eggs](#) : This is when you use eggs from another women. [More...](#)
- [A surrogate](#) : This is when another woman carries your baby. [More...](#)
- [Acupuncture](#) : Some people use alternative therapies to help them relax when they're having fertility treatment. [More...](#)

Treatment Group 1

Treatments for women with problems ovulating

If you don't ovulate each month, then you may not have an egg available to be fertilised by sperm. This problem is very common. About one-third of women who can't get pregnant have problems ovulating. To learn more, see [Problems ovulating](#) .

Key points about treating ovulation problems

- A drug called clomifene improves your chances of getting pregnant. It's a good treatment to try first. Some women may be offered a drug called metformin in combination with clomifene.
- If clomifene doesn't work, hormone injections may help. But they have more side effects than clomifene.
- A kind of surgery may also help women with a condition called [polycystic ovary syndrome](#) . It works as well as hormone injections.
- If these treatments don't work, ask your doctor about IVF (in vitro fertilisation).

Fertility problems

Which treatments work for treating women with problems ovulating?

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

For help deciding which treatment is best for you, see [How to use research to support your treatment decisions](#).

Treatments for women with problems ovulating

Treatments that are likely to work

- [Clomifene](#) (brand name Clomid): This drug is used to help you ovulate. [More...](#)
- [IVF](#) (in vitro fertilisation): This is a high-tech treatment where eggs and sperm are brought together in the laboratory. [More...](#)
- [Keyhole surgery on the ovaries](#) : This operation is used to help you ovulate. [More...](#)

Treatments that work, but whose harms may outweigh benefits

- [Hormone injections](#) : These include follitropin (brand names Gonal-F, Puregon), lutropin (Luveris), menotrophin (Menopur). [More...](#)

Treatments that need further study

- [Hormone pumps](#) : These are only used for some women with hormone problems. [More...](#)
- [Hormone injections and insemination](#) : Injections stimulate your ovaries to release eggs. Then, sperm is put into your womb to fertilise the eggs. [More...](#)
- [Metformin](#) (brand name Glucophage). This drug is sometimes used for women with polycystic ovary syndrome. [More...](#)

Treatment Group 2

Treatments for women with blocked or damaged tubes

If your [fallopian tubes](#) are blocked or damaged, eggs won't be able to reach your womb. Sometimes the damaged tubes swell and fill with fluid. The fluid can drain into the womb, making it difficult for the fertilised egg to grow into the lining of the womb. The most common reason why tubes get damaged or blocked is a condition called [pelvic inflammatory disease \(PID\)](#) . This is an infection that can affect the womb, ovaries, or tubes. To learn more, see [Blocked or damaged tubes](#) .

Fertility problems

Key points about treating blocked or damaged tubes

- IVF (in vitro fertilisation) is the best treatment if you have blocked or damaged tubes. But it can have side effects.
- Surgery on the tubes can help some women become pregnant and have a baby.
- Having surgery before IVF improves the chance of pregnancy for women whose tubes are swollen and full of fluid.

Which treatments work for women with blocked or damaged tubes?

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

For help in deciding which treatment is best for you, see [How to use research to support your treatment decisions](#).

Treatments for women with blocked or damaged tubes

Treatments that are likely to work

- [IVF](#) (in vitro fertilisation): This is a high-tech treatment where eggs and sperm are brought together in the laboratory. [More...](#)
- [Surgery on tubes](#) (before in vitro fertilisation): This is intended to help the embryo grow in the womb. [More...](#)

Treatments that need further study

- [Catheters](#) : These are tubes inserted into your fallopian tubes to make a passage through any blockages. [More...](#)

Treatment Group 3

Treatments for women with endometriosis

If you have endometriosis, the cells that normally grow in the lining of your womb (the endometrium) are also growing in other places outside your womb. They might grow around the ovaries and fallopian tubes, or the bowel. To learn more, see [Endometriosis](#). Doctors aren't sure why endometriosis lowers the chances of a woman getting pregnant. It may affect the quality of the egg, damage the sperm, cause scarring, or make it more difficult for the sperm to fertilise the egg.

Key points about treating women with endometriosis

- Hormone injections plus insemination (injecting sperm directly into the womb) improves the chance of pregnancy. Hormone injections can have side effects.

Fertility problems

- IVF (in vitro fertilisation) is likely to help you get pregnant but also has side effects.
- Surgery for endometriosis may improve your chances of pregnancy.
- Drugs to treat endometriosis will not help you get pregnant.

Which treatments work for women with endometriosis?

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

For help in deciding which treatment is best for you, see [How to use research to support your treatment decisions](#).

Treatments for women with endometriosis

Treatments that are likely to work

- [Hormone injections and insemination](#) : Injections stimulate your ovaries to release eggs. Then sperm is injected into your womb to fertilise the eggs. [More...](#)
- [Surgery](#) : Surgery can remove some of your endometriosis. [More...](#)
- [IVF](#) (in vitro fertilisation): This is a high-tech treatment where eggs and sperm are brought together in the laboratory. [More...](#)

Treatments that are unlikely to work

- [Hormone treatments](#) : Hormone treatments are used to reduce painful symptoms from endometriosis. But they don't help you get pregnant. [More...](#)

Treatment Group 4

Treatments for male infertility

Most men with fertility problems have one or all of these problems: too few sperm (low sperm count), abnormally shaped sperm, or sperm that don't swim well. Some men can make sperm, but can't get them into their partner's vagina. Treatments can increase the chance that a man's sperm will fertilise a woman's egg.

Key points about treating male infertility

- Treatment depends on how abnormal the man's sperm are and how low his sperm count is.
- Injecting sperm directly into the womb (insemination) can help with milder problems. But it doesn't work if a man has no sperm.

Fertility problems

- If insemination doesn't help, IVF (in vitro fertilisation) is another option. For the woman, IVF can have side effects.
- For men with poor-quality sperm, a treatment called ICSI works better than standard IVF.
- ICSI may also help men who have had an operation so their penis can't release sperm (a vasectomy) or who have [retrograde ejaculation](#) (their semen goes backwards into their bladder instead of toward the penis.)
- If none of these treatments helps you and your partner, you may wish to consider using donor sperm.

Which treatments work for treating male infertility?

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

For help in deciding which treatment is best for you, see [How to use research to support your treatment decisions](#).

Treatments for male infertility

Treatments that work

- [Injecting sperm into the womb](#) : This may be used if a man has a low sperm count or sperm that don't swim well. [More...](#)
- [ICSI](#) (intracytoplasmic sperm injection): This is a high-tech treatment. A sperm is injected directly into an egg in the laboratory. [More...](#)

Treatments that are likely to work

- [Donor sperm](#) : If a man has no sperm that can be used, the couple may consider using sperm from a donor. [More...](#)

Treatments that need further study

- [IVF](#) (in vitro fertilisation): This is a high-tech treatment where eggs and sperm are brought together in the laboratory. [More...](#)

Treatment Group 5

Treatments for unexplained infertility

One-third of couples with fertility problems have unexplained infertility. This means that doctors can't find a reason why they haven't been able to have a baby. To learn more, see [Unexplained infertility](#) . However, treatments can help.

Key points about treating unexplained infertility

- Doctors treat both partners to increase the chances of success.
- A drug called clomifene is sometimes given to the woman, but there is no evidence that this increases the chance of getting pregnant.
- Hormone injections and insemination (injecting sperm directly into the womb) can help, especially when tried together.
- **Fallopian tube** sperm perfusion is an alternative to injecting sperm directly into the womb.
- If this doesn't work, you may wish to try IVF (in vitro fertilisation) or GIFT (gamete intrafallopian transfer). These may have side effects.

Which treatments work for unexplained infertility?

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

For help in deciding which treatment is best for you, see [How to use research to support your treatment decisions](#).

Treatments for unexplained infertility

Treatments that work, but whose harms may outweigh benefits

- [Hormone injections and insemination](#) : Injections stimulate the woman's ovaries to release eggs. Then sperm is put into her womb to fertilise the eggs. [More...](#)

Treatments that need further study

- [IVF](#) (in vitro fertilisation): This is a high-tech treatment where eggs and sperm are brought together in the laboratory. [More..](#) .
- [GIFT](#) (gamete intrafallopian transfer): This is a variation on IVF, where the embryo is implanted into the woman's fallopian tube instead of her womb. [More...](#)

Fertility problems

Treatments that are likely to be ineffective or harmful

- [Clomifene](#) (Clomid): This drug is used to help a woman ovulate. [More...](#)

What will happen?

What you decide to do about your fertility problems is a very personal matter. It will depend on how important it is for you to have a child using your own eggs and sperm. And some couples are prepared to have far more tests and treatment than others.

Even without any treatment, some couples who are having difficulties conceiving do get pregnant.

If you've been trying for a baby for one year without success, it may help to know that about half of couples who've been trying for a year conceive in the second year of trying. And about a quarter of couples who have been trying for two years will conceive the following year. ^[5]

If you have treatment, your chances of success will depend on several things.

- The woman's age. Treatments such as IVF (in vitro fertilisation) are less successful in women over 35. IVF is the most common form of assisted reproduction technology (or ART for short). This means that scientists in a lab use human eggs and sperm to help a couple have a baby. If you're a woman over 35, it's important to get help sooner rather than later. The earlier you get treatment, the greater your chances of getting pregnant.
- The cause of your infertility.
- The type of treatment you have.
- The clinic where you're treated. Some clinics have better success rates than others. So it's important to do your homework and find one with a good track record. Look for one that helps couples have babies, and not just those that have high pregnancy rates.

Before you start having tests, it's useful to think about the different treatments.

- What sorts of treatments would you be prepared to try? How long will you try for? You may need to weigh up the strains and side effects of some fertility treatments against the possible benefits.
- What will you do if treatment using your own eggs and sperm doesn't work? You and your partner may want to consider other options such as [donor eggs](#) or [donor sperm](#), or adoption. Discussing how you feel about these options with your partner will help you prepare for whatever happens in the months to come. Your fertility clinic should be able to give you more information about these options.

Fertility problems

Bear in mind that tests and treatments for infertility can be a strain, physically, emotionally and sometimes financially. You'll need support and it may help to talk to a counsellor.

See [How infertility can make you feel](#) .

Questions to ask your doctor

General questions

- Where will we go for our tests and treatment?
- Can we be treated on the NHS?
- How long will we have to wait to see a specialist?
- Will we be able to talk to counsellors/other couples with fertility problems about our treatment?
- Who do we contact if we have any problems during our treatment?
- What are the treatment success rates (pregnancy and birth rates) of the hospital you are referring us to?
- How much will it cost if we go privately?

Questions for women

- What tests will I have?
- Are any of them uncomfortable or painful?
- What treatments are there for female infertility?
- What are the success rates?
- What are the side effects of the treatments I may have?
- Will I need to spend any time in hospital during my treatment?
- Will I need time off work or be unable to look after the home, play sport, drive a car or do any other activities while I'm having this test or treatment?

Questions for men

- What tests will I have?
- Are any of them uncomfortable or painful?

Fertility problems

- Will I be able to collect my semen sample at home, or will I need to go to the hospital clinic?
 - What treatments are there for male infertility?
 - What are the success rates?
 - What are the side effects of the treatments I may have?
 - Will I need to spend any time in hospital during my treatment?
 - Will I need time off work or be unable to look after the home, play sport, drive a car or do any other activities while I'm having this test or treatment?
-

Treatments:

Clomifene for women with problems ovulating

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 clomifene for women with problems ovulating?](#)

This information is for women who have fertility problems caused by problems ovulating. It tells you about clomifene, a treatment used for these types of fertility problems. It is based on the best and most up-to-date research.

Does it work?

Yes. If you haven't been able to get pregnant because you have [problems ovulating](#), clomifene can increase your chances of getting pregnant.

What is it?

Clomifene (sometimes spelled clomiphene) is a tablet that you take for five days, early in your monthly cycle. Its brand name is Clomid. The standard dose is 50 milligrams (mg) or 100 milligrams each day.

Clomifene encourages your ovaries to release eggs. It does this by changing the way oestrogen affects your body. This has the knock-on effect of increasing the levels of hormones that encourage ovulation.

If you're not ovulating because of a condition called [polycystic ovary syndrome](#) (PCOS), you may be offered a drug called **metformin** in combination with clomifene. But it's not clear whether metformin will help you have a baby.

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

Fertility problems

How can it help?

If you take clomifene, you are: ^[26]

- About seven times more likely to **ovulate** (release an egg from your ovaries)
- Nearly six times more likely to get pregnant.

After up to five cycles of treatment with clomifene: ^[27]

- About 6 in 10 women with ovulation problems ovulate (release an egg from their ovaries)
- About 2 in 10 women with ovulation problems get pregnant.

Clomifene can also help you get pregnant if you have polycystic ovary syndrome (PCOS). ^[26]

How does it work?

If you have [problems ovulating](#), it means that your **ovaries** are not releasing eggs regularly or at all. For you to get pregnant, the eggs need to leave the ovaries and move towards the womb.

When you take clomifene, your body makes more of the hormones that help you get pregnant. Some of these hormones help the young eggs in your ovaries to grow. And they help your ovary release an egg (ovulate). Sometimes more than one egg is released.

To read more about ovulation, see [Getting pregnant: the woman's role](#).

Can it be harmful?

Clomifene has some side effects but they're usually not serious and don't need treatment. Most of the side effects happen because of the extra hormones that your body makes when you take clomifene.

Side effects include:

- Feeling bloated, puffy, or uncomfortable
- Having hot flushes
- Putting on weight.

Fertility problems

Having twins or triplets

If you take clomifene and you get pregnant, you're more likely to have twins or triplets than a woman who doesn't take clomifene. You may even have four or more babies, although this is less common. This happens because clomifene can make your ovaries release more than one egg at a time.

- Less than 10 in 100 women who get pregnant with clomifene have a multiple pregnancy, usually twins. ^[28]
- This compares with an average of 1 in 100 or 2 in 100 women who have multiple births naturally. ^[29]
- One survey of pregnant women in the UK found that more than half the women who had triplets had taken clomifene. In two out of eight sets of quadruplets (four babies) and quintuplets (five babies) that were reported, the women had taken clomifene. ^[30]

Some couples might welcome having more than one baby, rather than seeing it as a problem. But if you have three, four, or more babies, there is a high risk of premature birth and the babies dying.

Cancer of the ovaries or womb

In one study, women who took clomifene were more likely to get cancer in their ovaries. ^[31] But about half these cancers were 'borderline', which means they grow very slowly and may never cause problems. Other researchers found no overall increase in cancer of the ovaries after treatment with clomifene, but they found that the women who did get ovarian cancer were more likely to have a serious tumour. ^[32]

Another study found that clomifene increased the risk of cancer of the womb, but found no increased risk of cancer of the ovaries. ^[33]

And in four other studies, clomifene didn't increase the chance of getting cancer. ^[34] ^[35] ^[36] ^[37]

So, overall, we can't say whether or not clomifene causes cancer.

How good is the research on clomifene for women with problems ovulating?

One big review (called a **systematic review**) found that women who had problems ovulating and took clomifene were about six times more likely to get pregnant than women who took a dummy treatment (a **placebo**). The review looked at three studies, including 133 women. Most of this research was done many years ago. ^[26]

IVF for women with problems ovulating

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 in vitro fertilisation for women with problems ovulating?](#)

This information is for women who have fertility problems caused by problems ovulating. It tells you about in vitro fertilisation (IVF), a treatment used for these types of fertility problems. It is based on the best and most up-to-date research.

Does it work?

Yes. IVF can help women with problems ovulating. It's better not to wait if doctors think you need IVF because you're less likely to get pregnant as you get older. How well IVF works also depends on the clinic you go to.

IVF is a very demanding treatment and it can have side effects.

What is it?

IVF stands for in vitro fertilisation. It's the most common form of assisted reproductive technology (or ART for short). This means that scientists in a lab use human eggs and sperm to help a couple have a baby.

Doctors normally suggest IVF when other treatments haven't worked. IVF can help couples with infertility caused by different reasons. ^[8]

Scientists mix the man's sperm with the woman's eggs in a lab. The sperm are allowed to join with the eggs. This is fertilisation. 'In vitro' means that it happens in a laboratory. Doctors then put back the fertilised eggs (now called embryos) into the woman's womb so that they can grow, just as in a usual pregnancy.

For more information, see [More about IVF](#) .

IVF is sometimes used together with [intracytoplasmic sperm injection](#) (ICSI). ICSI involves injecting a single sperm directly into the egg. It's usually done if a man has problems with his sperm. It's also used sometimes as an add-on to standard IVF, especially if a first attempt at IVF hasn't worked.

How can it help?

One study of couples with all types of infertility showed that IVF increases the chances of having a baby. But it may not work the first time. You may need to try IVF several times. ^[49]

National figures show that infertile couples who have IVF have a 1 in 5 chance of having a baby after one attempt. ^[50]

Fertility problems

But we don't know how many of these women might have had a baby without IVF. Your individual chances will depend partly on the clinic where you are treated. IVF works best for women under 35. A third of women under 35 get pregnant after one cycle of IVF.^[50] Only 1 in 10 women aged 40 to 42 get pregnant from one cycle of IVF.

If you've had problems for several years or have never been pregnant, you have less chance of having a baby with IVF.^[51] If possible, you should go to a big fertility clinic for IVF. Larger clinics (giving more than 200 treatment cycles a year) have higher rates of pregnancy than smaller ones.^[52]

How does it work?

When a woman usually gets pregnant, one of her eggs is fertilised by a man's sperm as the egg travels down her fallopian tube. The fallopian tubes carry eggs from the ovaries to the womb.

See [Getting pregnant: the woman's role](#) to read more about what happens normally.

If you have problems ovulating, you don't produce eggs regularly. Sometimes you can be helped by medications. Other times the medications don't work well enough. Many couples have more than one reason for their infertility. By mixing sperm with eggs in a laboratory and putting them directly into the womb, fertility problems may be avoided.

Can it be harmful?

IVF can have some serious side effects for the woman. You and your partner need to talk to your doctor about these side effects before deciding to try IVF.

Most of the symptoms happen because of the extra hormones that a woman takes before IVF to help her make extra eggs. For more information, see [More about IVF](#).

One side effect is called **ovarian hyperstimulation syndrome** (OHSS). It happens in about 1 in 10 women who take hormone injections.^[53] It can be mild or severe.

Symptoms of mild OHSS include:

- Feeling swollen or puffy
- Putting on weight
- Feeling bloated
- Having mild nausea.

These symptoms normally last only a week and you may feel better if you drink more fluid.

You may also have more serious side effects such as:

Fertility problems

- Vomiting
- Pain in your abdomen
- Feeling out of breath.

About 1 in 50 women who have IVF have serious problems that can affect their heart and circulation, lungs, **liver** or **kidneys**. If this happens, you may need to go to hospital. ^[54]

Multiple pregnancy

If you have IVF, you may have more than one baby. This is because doctors may put two embryos back into your womb. This increases the chance of the IVF working, but it might work 'too well', so you have a multiple pregnancy.

In the UK, the chances of having twins after IVF treatment is about 1 in 4. ^[52]

Some couples might welcome having more than one baby, rather than seeing it as a problem. But if you have three, four or more babies, there is a high risk of having a premature birth and of the babies dying.

Premature birth

Children born after IVF are more likely to be premature and with a low birth weight. ^[55] One study found that using hormone treatments before IVF can increase the chance of a baby being born with a low birth weight. ^[56] The same study found that using hormone treatments before IVF does not increase the chance of premature birth.

But this is probably due to the greater number of multiple pregnancies and the older age of women having IVF, rather than to the IVF itself. There is no evidence that IVF babies are more likely than other babies to be born with birth defects. ^[57]

A big study that looked at the health of children born after IVF showed most children were healthy. But they were slightly more likely to need to go to hospital than children not born after IVF. ^[58]

How good is the research on in vitro fertilisation for women with problems ovulating?

The main evidence for in vitro fertilisation (IVF) comes from one high-quality study (called a **randomised controlled trial**) that included 399 couples with infertility caused by different reasons. ^[49] Some of the couples had IVF straight away. Others waited six months before having IVF.

Fertility problems

More women in the group having IVF straight away got pregnant. But the figures are hard to compare, because some of them got pregnant before they were scheduled to start treatment.

- Of the women in the group having IVF straight away, 10 in 100 got pregnant after treatment. Another 7 in 100 got pregnant before starting treatment.
- In the other group, 8 in 100 women got pregnant while awaiting treatment.
- There were more babies born in the group that had IVF. But that's partly because some of them had twins or quadruplets.

So the study shows that women having IVF were more likely to get pregnant. But it's not easy to say exactly how much treatment improved their chances of having a baby.

National figures show that infertile couples who have IVF have about a 1 in 5 chance of having a baby after one attempt.^[59] IVF works best for women under 35.

Metformin for women with problems ovulating

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 metformin for women with problems ovulating?](#)

This information is for women who have problems ovulating because of a condition called polycystic ovary syndrome (PCOS). It tells you about metformin, a treatment used for this type of fertility problem. It is based on the best and most up-to-date research.

Does it work?

We don't know. Metformin may help some women with problems ovulating because of polycystic ovary disease to get pregnant. But it doesn't seem to increase the chances of having a baby.^[60]

What is it?

Metformin is a drug that belongs to a group of chemicals called **biguanides**. You can take it as a tablet or a liquid. One brand name is Glucophage.

Metformin is usually used to treat **diabetes**. It helps make your body more sensitive to **insulin**. This, in turn, may help you ovulate if you're a woman with PCOS.^[61]

How can it help?

If you have PCOS, taking metformin may help you ovulate.^[61] ^[62] You may be two or three times more likely to ovulate than if you don't take it. Women with PCOS may be

Fertility problems

more likely to get pregnant if they take metformin. But it doesn't seem to improve the chances of having a baby. We don't know why this is. It may be because of miscarriages among the women who got pregnant while taking metformin. ^[60]

Some women take metformin along with another drug called clomifene. This may improve their chances of getting pregnant more than taking clomifene alone. But it doesn't seem to improve their chances of having a baby. ^[60] Clomifene alone works better than metformin alone.

If you have PCOS, taking metformin before having [IVF](#) (in vitro fertilisation) doesn't seem to improve your chances of becoming pregnant through IVF. ^[63] However, metformin might reduce the risk of a side effect of IVF, called **ovarian hyperstimulation syndrome**.

How does it work?

Many women who don't ovulate have polycystic ovary syndrome (PCOS). If you have PCOS, your body's insulin may not work as well as it should. This is called insulin resistance. Taking metformin helps insulin work better, and this in turn helps women to ovulate. ^[61]

Can it be harmful?

Metformin may cause an upset stomach or diarrhoea. ^[64]

Your doctor may recommend that you take metformin with food, or build up your dose slowly.

If you are taking metformin, it must be stopped before you have a test called a **hysterosalpingogram**. This test uses dye injected through your vagina to give a clear x-ray picture of your womb. It's also important to stop metformin before having any other x-ray test using dye that contains iodine. This is to avoid a side effect called **lactic acidosis**.

How good is the research on metformin for women with problems ovulating?

The evidence for metformin is quite mixed. We found three big reviews (called [systematic reviews](#)) and another good-quality study (a [randomised controlled trial](#)) looking at metformin for women with [polycystic ovary syndrome](#) .

The most up-to-date review looked at 44 individual studies covering almost 4,000 women. It showed that women taking metformin, or metformin as well as clomifene, had a better chance of getting pregnant. However this did not translate into a better chance of having a baby. ^[60]

Hormone injections for women with problems ovulating

In this section

Fertility problems

[Do they work?](#)

[What are they?](#)

[How can they help?](#)

[How do they work?](#)

[Can they be harmful?](#)

[How good is the research on hormone injections for women with problems ovulating?](#)

This information is for women who have fertility problems caused by problems ovulating. It tells you about hormone injections, a treatment used for these types of fertility problems. It is based on the best and most up-to-date research.

Do they work?

If you haven't been able to get pregnant because you have [problems ovulating](#), hormone injections can help you ovulate more regularly. This treatment is likely to increase your chances of getting pregnant.

But hormone shots have more side effects than a drug called [clomifene](#).

What are they?

The injections contain **hormones** that are very similar to the hormones that your body makes normally. They are for women who have problems ovulating.

You have your first injection when your [monthly cycle](#) starts. Then you have injections every day for up to 12 days. You or your partner will be taught how to give the injections. They are easy to do and are usually given in your thigh.

These are the types of hormone injections (and their brand names) you can take:

- follitropin alfa (Gonal-F)
- follitropin beta (Puregon)
- lutropin (Luperis) (along with another hormone called FSH if you have **hypogonadotropic hypogonadism** (for more information, see [Low hormone levels](#)))
- menotrophin (Menopur)
- urofollitropin (Fostimon).

These injections contain different hormones. Read about the [different types of hormone injections](#).

Your doctor may suggest that you have hormone injections if you:

- Have already tried a drug called [clomifene](#) but it hasn't helped
- Have a condition called [polycystic ovary syndrome](#) (PCOS for short).

Fertility problems

- Have a condition called **hypogonadotropic hypogonadism** (for more information, see [Low hormone levels](#)).

If you have hormone injections, doctors will check how your eggs are growing. They use **ultrasound** to do this. ^[8]

When doctors can see that one of your eggs is ready, you may be given a different hormone injection. This injection includes a hormone called **human chorionic gonadotropin** (hCG). It encourages your ovary to release the egg (ovulate). Brand names for this drug include Pregnyl and Choragon.

How can they help?

There hasn't been any good research that shows whether having hormone injections works better than having no treatment at all. ^[65] But we do know that hormone injections help you ovulate. And it's likely that this will help you get pregnant.

If you have polycystic ovary syndrome (PCOS) and are treated with hormone injections, you have between a 1 in 10 and 1 in 3 chance that you will get pregnant each cycle. ^[53]
^[66]

The different hormone injections seem to work equally well. ^[53]

How do they work?

Hormone injections contain two different **hormones** . Some injections contain **follicle-stimulating hormone** (FSH). Others contain both FSH and **luteinising hormone** (LH). One contains just LH.

These hormones are made by a part of your brain. They help you ovulate every month. If you don't make enough of these hormones or they don't work properly, you may not ovulate.

To read more about your hormones and ovulation, see [What happens every month](#) .

Can they be harmful?

Hormone injections have some side effects.

You're more likely to get side effects if you take hormone injections than if you take a drug called [clomifene](#) .

One side effect of hormone injections is called **ovarian hyperstimulation syndrome** (OHSS). It can be mild or severe.

Mild symptoms include:

- Swelling in your legs or arms

Fertility problems

- Putting on weight
- Feeling bloated.

About 1 in 10 women get more serious side effects such as: ^[53] ^[67]

- Feeling sick or vomiting
- Being out of breath
- Having problems with their **kidneys** or **liver** .

Having twins or triplets

If you take hormone injections and you get pregnant, you're more likely to have twins or triplets than women who don't take hormone injections. And you may have more than three babies.

This happens because the hormones can make your ovaries release more than one egg at a time.

About 1 in 3 women with a condition called [polycystic ovary syndrome](#) who were treated with hormone injections gave birth to more than one baby. ^[67]

Some couples might welcome having more than one baby, rather than seeing it as a problem. But if you have three, four or more babies, there is a high risk of premature birth and the babies dying.

Cancerous changes in the ovaries

There is some evidence that women who have hormone injections may be more likely to get cancerous changes in their ovaries. ^[37] But we can't say for certain.

How good is the research on hormone injections for women with problems ovulating?

There haven't been any good studies involving comparing hormone injections with no treatment for women who have problems ovulating.

There also haven't been any good studies comparing these injections with another common treatment called [clomifene](#) .

Instead, most studies have compared different types of hormone injections. These studies included more than 2,000 cycles of hormone treatments.

Two large reviews of studies (called **systematic reviews**) have found that older hormone injections (made from urine) and newer ones (made in the laboratory) work about the

Fertility problems

same to help women ovulate. ^[53] ^[68] Between 1 in 10 and 1 in 3 women who have [polycystic ovary syndrome](#) (PCOS) get pregnant each cycle using these injections.

Keyhole surgery on ovaries (laparoscopic ovarian drilling) for women with problems ovulating

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 keyhole surgery on ovaries for women with problems ovulating?](#)

This information is for women who have problems ovulating because of a condition called polycystic ovary syndrome (PCOS). It tells you about keyhole surgery on the ovaries, a treatment used for this type of fertility problem. It is based on the best and most up-to-date research.

Does it work?

If you haven't been able to get pregnant because you have a condition called [polycystic ovary syndrome](#) (PCOS for short), a special kind of surgery might help you get pregnant.

You are just as likely to get pregnant with this treatment as if you have [hormone injections](#).

What is it?

A surgeon makes a series of small holes in your ovaries. This helps you ovulate. It's a treatment that is often recommended to women who have polycystic ovary syndrome. Doctors call this treatment 'laparoscopic drilling'. It's a kind of **keyhole surgery**.

If you're having a test called a laparoscopy to check your ovaries, your surgeon may be able to give you this treatment at the same time.

You have this treatment in hospital and you'll need a **general anaesthetic**. Here's what happens:

- The surgeon makes a small cut in your abdomen and puts in a narrow tube attached to a tiny camera (called a laparoscope)
- The camera sends a picture to a large screen in the operating theatre, so the surgeon can look at your ovaries
- The surgeon then makes another small cut and puts in a second tube
- Using a **laser beam** or a heated wire in the second tube, the surgeon can make small holes in your ovary.

Fertility problems

How can it help?

There hasn't been any good research looking at whether having this type of surgery is more likely to help you get pregnant than having no treatment at all. But we know that this kind of surgery helps you **ovulate**. So it's likely that it can help you get pregnant.

If you have polycystic ovary syndrome and you've tried a drug called [clomifene](#) but it hasn't worked, having holes put in your ovaries will give you about a 6 in 10 chance of getting pregnant within 12 months. ^[69]

The chance of getting pregnant with surgery on your ovaries is about the same chance as if you have [hormone injections](#). ^[69] Surgery also seems to work about as well as taking another drug called [metformin](#). ^[70]

It doesn't seem to matter how the holes are made in the ovaries. The different techniques work equally well. ^[69]

How does it work?

If you have polycystic ovary syndrome, your **ovaries** can't release eggs. So the eggs can't travel to the womb. Making holes in your ovaries seems to help them release eggs.

Doctors aren't sure exactly why this type of surgery works.

Can it be harmful?

When you have any type of surgery, there's a small chance that you'll get:

- An infection
- Problems with bleeding or your circulation.

If you have a **general anaesthetic**, there's a small added chance of:

- Problems with your breathing or circulation
- Blood clots
- An allergic reaction to the anaesthetic.

With this type of surgery, you may get:

- Scars on your ovaries, but this shouldn't affect your chances of getting pregnant ^[71]
- An infection in your ovary. You can take **antibiotics** to get rid of the infection. ^[72]

Fertility problems

Unlike some other treatments ([clomifene](#) or [hormone injections](#)), surgery won't increase your chances of having twins or triplets.^[28] This is because it helps you ovulate naturally rather than increasing the number of eggs being released.

How good is the research on keyhole surgery on ovaries for women with problems ovulating?

There is evidence that keyhole surgery works as well as [hormone injections](#) or [metformin](#) , another common treatment for women who have [problems ovulating](#) .^[69] ^[73] There is about a 3 to 6 in 10 chance of getting pregnant after 6 to 12 months with any of these treatments.

Hormone pumps for women with problems ovulating

In this section

[Do they work?](#)

[What are they?](#)

[How can they help?](#)

[How do they work?](#)

[Can they be harmful?](#)

[How good is the research on hormone pumps for women with problems ovulating?](#)

This information is for women who have problems ovulating because of a condition called hypogonadotropic hypogonadism. It tells you about hormone pumps, a treatment used for this type of fertility problem. It is based on the best and most up-to-date research.

Do they work?

Hormone pumps may help some women with low hormone levels become pregnant. But these pumps aren't used much any more. Most women who have problems ovulating get [hormone injections](#) .

What are they?

Hormone pumps work by releasing hormones into your body to help you ovulate. But they are only used for a very small number of women with hormone problems. These women have a condition called [hypogonadotropic hypogonadism](#) . This condition causes women to have difficulty ovulating.

Doctors don't use the pumps for women with [polycystic ovary syndrome](#) (PCOS). PCOS is the most common reason why women don't ovulate.

You wear a belt holding the hormone pump, which gives you a regular dose of the hormone about every 90 minutes. It goes into your body through a needle placed beneath the skin (usually in your abdomen) or into a blood vessel.^[8]

You'll probably need to go into hospital every few days to have the needle moved. And you might have scans to see how your eggs are growing.

Fertility problems

How can they help?

There hasn't been any good research comparing hormone pumps with having no treatment. And most of the research is quite old. But we do know that hormone pumps help women ovulate. So they should increase your chances of getting pregnant.

One study from 1995 found that more than 6 in 10 women with low hormone levels who have this treatment for a year have a baby. ^[74]

How do they work?

Hormone pumps copy the way that the body naturally produces a hormone called gonadotropin-releasing hormone (GnRH). Some women don't ovulate because they don't make enough.

GnRH is normally made in a part of the brain. It makes another part of the brain produce two other hormones you need to ovulate: follicle-stimulating hormone (FSH) and luteinising hormone (LH).

The pump mimics the way the hormone is released into your bloodstream naturally.

[Hormone injections](#) also help women ovulate, but in a different way. Hormone injections contain FSH or LH, not GnRH.

To find out more about these hormones, see [What happens every month](#) .

Can they be harmful?

If you use a hormone pump, you run the risk of having twins or triplets or more. This happens because the pump helps you to produce more than one egg. ^[75] About 1 in 25 women (4 percent) having this treatment have twins or triplets. ^[74] You're more likely to have twins than triplets. ^[75]

Some couples might welcome having more than one baby, rather than seeing it as a problem. But if you have three, four or more babies, there is a high risk of premature birth and the babies dying.

How good is the research on hormone pumps for women with problems ovulating?

Some studies have followed about 250 women with naturally low levels of certain sex hormones (FSH and LH). This condition is called [hypogonadotropic hypogonadism](#) . About 8 in 10 of these women got pregnant after about a year (12 cycles) of using a hormone pump. But the studies didn't compare using a pump with having no treatment.

Most of the studies about hormone pumps are quite old, or too small or short to be reliable. Doctors aren't carrying out new studies, mainly because hormone pumps aren't used much any more. Most women with problems ovulating are now offered [hormone injections](#) .

Hormone injections and insemination for women with problems ovulating

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 hormone injections and insemination for women with problems ovulating?](#)

This information is for women who have fertility problems caused by problems ovulating. It tells you about hormone shots and insemination, treatments used for these types of fertility problems. It is based on the best and most up-to-date research.

Does it work?

We don't know. There hasn't been any good research about injecting sperm directly into the womb (**intrauterine insemination**) and having hormone injections for women who are having problems ovulating.

What is it?

In this treatment, a woman has hormone shots to boost her egg supply. Then around the time she is ovulating, doctors inject sperm into her womb.

Hormone injections

Hormone injections contain hormones that are very similar to the hormones that your body makes naturally.

You have your first injection when your [monthly cycle](#) starts. Then you have injections every day for up to 12 days. You or your partner will be taught how to give the injections. They are easy to do and are usually in your thigh.

These are some types of hormone injections (and their brand names):

- follitropin (Gonal-F, Puregon)
- menotrophin (Menopur).

These injections contain different hormones. For more information, see [Types of hormone injections](#) .

Insemination

This is when doctors put sperm directly into your womb. Doctors call it **intrauterine insemination** (or IUI for short). It's usually done 36 hours after your hormone injection.

Here's what happens:

Fertility problems

- Your male partner will be asked to produce a sample of semen in the clinic
- The semen is washed and treated to remove unwanted cells
- Doctors monitor you with an ultrasound probe to see if you are ovulating
- If you are ovulating doctors use a fine tube to inject the treated semen up through your vagina and into your womb.

How can it help?

We don't know if it does. There hasn't been any good research about intrauterine insemination for women with problems ovulating.

How does it work?

Hormone injections can help women ovulate. Adding intrauterine insemination helps women become pregnant if they have other types of infertility, like [endometriosis](#) or [unexplained infertility](#) .

Can it be harmful?

Hormone injections have some side effects. They happen because your ovaries overreact to the extra hormones. This is called **ovarian hyperstimulation syndrome** (OHSS). It can be mild or severe.

You may have mild symptoms such as:

- Swollen legs or arms
- Putting on weight
- Feeling bloated.

You may also have more severe symptoms such as: ^[76] ^[77]

- Feeling sick or vomiting
- Being out of breath
- Having problems with your kidneys or liver.

In very serious cases of OHSS, you may have heart and circulation problems. This can be dangerous and you may need to go to hospital, but this is rare.

Fertility problems

You can also have more than one baby (for example twins or triplets). About 1 in 3 women with [polycystic ovary syndrome](#) who were treated with hormone injections gave birth to more than one baby.^[78]

How good is the research on hormone injections and insemination for women with problems ovulating?

There hasn't been any good research about adding intrauterine insemination to hormone injections for women who have problems ovulating.

But this combination of treatments may help women with other types of infertility such as [endometriosis](#) or [unexplained infertility](#).^{[79] [80]}

Frozen embryos and eggs

In this section

This information is for couples who have fertility problems. It tells you about using frozen embryos and eggs to become pregnant.

We haven't looked at the research on using frozen embryos and eggs in the same detail we have for the other treatments we cover. (To read more, see Our method.) But we've included some information because you may be interested in this treatment.

Freezing eggs or embryos is also known as **cryopreservation**.

You can use frozen embryos and eggs:

- There are embryos left after having in vitro fertilisation (IVF)
- You had embryos frozen before having chemotherapy, radiotherapy or surgery that might harm your ovaries (if you are well enough and the hormones won't harm you)
- You are using an [egg from a donor](#)
- You are using embryos donated by people who have done IVF.

The frozen embryos will be placed in your womb to grow as in a usual pregnancy.

Your chance of having a baby using frozen embryos is slightly lower than it is for IVF with fresh embryos. About 1 in 4 women under the age of 37 have a baby this way, compared with 1 in 3 who use fresh embryos.^[81]

You can also freeze your own eggs or ovarian tissue to use in the future. It is more difficult to freeze eggs than to freeze embryos.^[82] Freezing of ovarian tissue is experimental but it has been done.^{[83] [84]}

Fertility problems

In April 2005 the law about egg and sperm donation changed in the UK. Anyone who donates their eggs or sperm must give information about themselves. This information can be made available to a child born from the sperm or eggs once he or she is aged 18 or older. ^[85]

You may wish to see an [infertility counsellor](#) to talk about this treatment.

A surrogate

In this section

This information is for couples who have fertility problems. It tells you about using a surrogate to carry a baby for you.

We haven't looked at the research on using a surrogate in the same detail we have for the other treatments we cover. (To read more, see Our method .) But we've included some information because you may be interested in it.

This is when another woman carries a baby for you. You may consider using a surrogate if you don't have a uterus, or you have problems maintaining a pregnancy.

A surrogate can:

- Carry an embryo made from your eggs and your partner's sperm, after you do in vitro fertilisation (IVF)
- Carry an embryo made from [donor eggs](#) , or from [donor sperm](#)
- Have donor insemination with your partner's sperm or donor sperm.

If you use your own eggs and sperm, the baby will be genetically related to you. If you use donor eggs, the baby will not be related to the mother. If you use donor sperm, the baby will not be related to the father.

There are legal issues you need to think about when considering using a surrogate. For example, you may need to find out what could happen, and where you stand legally, if the surrogate changes her mind and wants to keep the baby. It's probably a good idea to see an [infertility counsellor](#) about these options.

In April 2005 the law about egg and sperm donation changed in the UK. Anyone who donates their eggs or sperm must give information about themselves. This information can be made available to a child born from the sperm or eggs once he or she is aged 18 or older. ^[5]

Acupuncture

In this section

[What is it?](#)

Fertility problems

[How can it help?](#)
[How does it work?](#)
[Can it be harmful?](#)

This information is for women who have fertility problems. It tells you about acupuncture, a treatment sometimes used along with in vitro fertilisation (IVF).

We haven't looked at the research on acupuncture in the same detail we have for the other treatments we cover. (To read more, see Our method .) But we've included some information because you may be interested in it.

What is it?

Acupuncture is a traditional Chinese treatment. If you have acupuncture, a trained acupuncturist puts sterile needles into your skin.

Fertility treatments can be stressful and expensive. So it's not surprising that many infertile couples look to complementary or alternative treatments.

We don't know whether alternative treatments can help you get pregnant on their own. There hasn't been enough research to say. But researchers have looked to see whether acupuncture can help improve the success of in vitro fertilisation (IVF). IVF is a high-tech treatment where eggs are fertilised by sperm in the laboratory. Doctors then put back the fertilised eggs (now called embryos) into the woman's womb so that they can grow, just as in a usual pregnancy.

How can it help?

Acupuncture is unlikely to help. There have been several studies, which have been analysed together by researchers. However, different groups of researchers have come to different conclusions about what the studies mean.

The most recent summary of the research looked at the results of 20 studies. The researchers concluded that acupuncture did not improve the rates of success of IVF. Couples who had acupuncture in addition to IVF were no more likely to get pregnant or have a baby.^[86]

How does it work?

Traditional acupuncturists believe that acupuncture improves the flow of energy around the body. Some modern doctors think that putting needles in the skin causes the body to release natural chemicals that block pain and make you feel relaxed. Another theory is that acupuncture might work like a talking therapy. Discussing your situation with an acupuncturist and relaxing while the needles are put in might help to reduce anxiety.^[87] However, it's not clear how acupuncture might make IVF more successful.

Can it be harmful?

Acupuncture is usually safe, so long as you go to a **properly trained acupuncturist**. There is a risk of infection if the practitioner doesn't use properly sterilised needles.

Donor eggs

In this section

This information is for women who have fertility problems. It tells you about using eggs from a donor.

We haven't looked at the research on using donor eggs in the same detail we have for the other treatments we cover. (To read more, see [Our method](#) .) But we've included some information because you may be interested in it.

This is also known as **oocyte donation**.

This treatment uses another woman's eggs to help you try to become pregnant. The donor eggs are fertilised in a laboratory with your partner's sperm or [donor sperm](#) (this is called in vitro fertilisation, or IVF). The embryo (or embryos) are then placed in your womb to grow as in a usual pregnancy. You can also use a donated embryo.

If you use an eggs from a donor, the baby will not be related genetically to you. If you use a donated embryo, the baby will not be related genetically to you or your male partner.

You might use donor eggs if you have a problem with your eggs because of:

- [Early menopause](#)
- Cancer treatment, such as chemotherapy or radiotherapy
- Surgery on your ovaries
- Your age (your blood tests or previous attempts at IVF show that your own eggs are unlikely to result in a pregnancy)
- A genetic disease (see [Pre-implantation genetic diagnosis](#))
- A problem taking hormonal treatment for IVF.

The success of IVF usually depends on the age of the woman whose eggs are used, not the age of the woman carrying the pregnancy. ^[88]

In April 2005 the law about egg and sperm donation changed in the UK. Anyone who donates their eggs or sperm must give information about themselves. This information can be made available to a child born from the sperm or eggs once he or she is aged 18 or older. ^[89]

It is necessary to consider legal, financial, and emotional aspects of using an egg donor. You may wish to see an [infertility counsellor](#) .

Pre-implantation genetic diagnosis

In this section

This information is for couples who are concerned about passing on a genetic disease to their baby. It tells you about having a pre-implantation genetic diagnosis while undergoing in vitro fertilisation (IVF).

We haven't looked at the research on having a pre-implantation genetic diagnosis in the same detail we have for the other treatments we cover. (To read more, see [Our method](#) .) But we've included some information because you may be interested in it.

You may want to think about having pre-implantation diagnosis if you or your partner has a genetic disease.^[90] Or, your doctor may suggest you have it if you have had several miscarriages and he or she wants to examine your embryos.

When you have pre-implantation genetic diagnosis (PGD), you undergo in vitro fertilisation (IVF) as usual. At a very early stage, when there are only eight cells in the developing embryo, doctors carefully take one of the cells out to examine the genes. Taking one cell out at this very early stage is not likely to harm the embryo. Doctors then choose healthy embryos that don't seem to have a gene problem to put back into your uterus.

There hasn't been much research looking at PGD for infertility. It's only recommended for use if you or your partner has a genetic disease. There's no research to show that it can help women who've had several miscarriages.

One study showed that women who had IVF with PGD were **less likely to give birth** to a baby, compared with women who had IFV without PDG.^[91]

IVF for women with blocked or damaged tubes

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 IVF for women who have blocked or damaged tubes?](#)

This information is for women who have fertility problems caused by blocked or damaged tubes. It tells you about in vitro fertilisation (IVF), a treatment used for these types of fertility problems. It is based on the best and most up-to-date research.

Does it work?

Yes. There hasn't been a lot of research on IVF. But there is evidence that if you have [blocked or damaged tubes](#) , IVF can help you get pregnant.

How well IVF works also depends on the clinic you go to and the woman's age. As women get older, they are less likely to get pregnant. See [What will happen?](#)

Fertility problems

IVF is a very demanding treatment and it can have side effects.

If you're thinking about trying a kind of IVF called ICSI, you should talk to your doctor about the possible risks to your baby.

What is it?

IVF stands for in vitro fertilisation. It's the most common form of **assisted reproductive technology** (or ART for short). This means that scientists in a laboratory use human eggs and sperm to help a couple have a baby.

Doctors normally suggest IVF when other treatments haven't worked. IVF is offered to couples with infertility whatever the cause. ^[8]

Scientists mix the man's sperm with the woman's eggs in a lab. The sperm are allowed to join with the eggs. This is fertilisation. 'In vitro' means that it happens in a laboratory. Doctors then put back the fertilised eggs (now called embryos) into the woman's womb so that they can grow, just as in a normal pregnancy.

See [More about IVF](#) .

IVF is sometimes used together with [intracytoplasmic sperm injection](#) (ICSI). ICSI involves injecting a single sperm directly into the egg. It's usually done if a man has problems with his sperm. It's also used sometimes as an add-on to standard IVF, especially if a first attempt at IVF hasn't worked.

How can it help?

There haven't been any studies comparing IVF with having no treatment at all for women with [blocked or damaged tubes](#) . But we do know quite a lot about IVF in general.

- One study of couples with all types of infertility found that IVF increases your chances of having a baby. ^[49] But it may not work the first time. You may need to try the IVF several times.
- If a woman has blocked or damaged tubes and the man has no problems, standard IVF works just as well as ICSI. ^[92]
- National figures show that infertile couples who have IVF have about a 1 in 5 chance of having a baby after one attempt. ^[93] But we don't know how many of these women might have had a baby without IVF. Also, remember that this figure is an average and your individual chances will depend partly on the clinic where you are having treatment.
- If possible, you should go to a big fertility clinic for IVF. Larger clinics (giving more than 200 treatment cycles a year) have higher rates of pregnancy than smaller ones. ^[38]

Fertility problems

- IVF works best for women under 35. The chances of it working drop quickly once the woman has reached 35. ^[51]
- If you've had problems for several years or have never been pregnant, you have less chance of having a baby with IVF. ^[51]

How does it work?

When a woman gets pregnant naturally, one of her eggs is fertilised by a man's sperm as the egg travels down her fallopian tube. The fallopian tubes carry eggs from the ovaries to the womb.

See [Getting pregnant: the woman's role](#) to read more about what happens normally.

If one or both of the fallopian tubes are blocked or damaged, the egg may not be able to get into the womb. And sperm may not be able to reach the egg.

By taking eggs out of a woman's ovaries and fertilising them in a laboratory, surgeons can bypass the blocked tubes. The fertilised eggs can go straight into her womb, where they can grow as normal.

Can it be harmful?

IVF can have some serious side effects for the woman. You and your partner need to talk to your doctor about these side effects before deciding to try IVF.

Most of the symptoms happen because of the extra hormones that a woman needs to take before IVF to help her produce extra eggs. See [More about IVF](#). Some common symptoms include:

- Feeling swollen or puffy
- Putting on weight
- Feeling bloated
- Having mild nausea.

These symptoms normally last only a week and you may feel better if you drink more fluid.

You may also have more serious side effects such as:

- Vomiting
- Pain in your abdomen
- Feeling out of breath.

Fertility problems

If you have these symptoms, your doctor may advise you to rest and drink more fluid.

About 1 in 50 women (2 percent) who have IVF have serious problems that can affect their heart and circulation, lungs, liver, or kidneys.^[54] If this happens, you may need to go to hospital.

Multiple pregnancy

If you have more than one embryo put into the womb, you may give birth to more than one child. This increases the chance of the IVF working, but more than one embryo might grow. Guidelines for doctors now say only one embryo should be put into the womb at the first attempt, unless there are no good quality embryos. Doctors working in the NHS are told not to put more than two embryos into the womb in one cycle of IVF.^[7]

Some couples might welcome having more than one baby, rather than seeing it as a problem. But if you have three, four or more babies, there is a high risk of premature birth and the babies dying.

One study found that using hormone treatments before IVF can increase the chance of a baby being born with a low birth weight.^[56] The same study found that using hormone treatments before IVF does not increase the chance of premature birth.

Premature birth

Children born after IVF are more likely to be premature and with a low birth weight.^[55]

But this is probably because of the higher number of multiple pregnancies and the older age of women having IVF, rather than an effect of the IVF itself. There's no evidence that babies born after IVF are more likely to be born with birth defects.^[94]

A big study that looked at the health of children born after IVF showed most children were healthy. But they were slightly more likely to need to go to hospital than children not born after IVF.^[58]

One study found that using hormone treatments before IVF can increase the chance of a baby being born with a low birth weight.^[56] The same study found that using hormone treatments before IVF does not increase the chance of premature birth.

ICSI

If you're thinking about trying ICSI, you should talk to your doctor about the possible risks to your baby.

These risks are not certain, as some studies show no difference between children born through ICSI and IVF and those who are conceived without it.

But there is some evidence that children born as a result of ICSI are more likely to have serious physical and mental problems.^{[95] [96]}

How good is the research on IVF for women who have blocked or damaged tubes?

The main evidence for in vitro fertilisation (IVF) comes from one high-quality study (called a [randomised controlled trial](#)) that included 399 couples with infertility caused by different reasons.^[49] Some of the couples had IVF straight away. Others waited six months before having IVF.

More women in the group having IVF straight away got pregnant. But the figures are hard to compare, because some of them got pregnant before they were scheduled to start treatment.

- Of the women in the group having IVF straight away, 10 in 100 got pregnant after treatment. Another 7 in 100 got pregnant before starting treatment.
- In the other group, 8 in 100 women got pregnant while awaiting treatment.
- There were more babies born in the group that had IVF. But that's partly because some of them had twins or quadruplets.

So the study shows that women having IVF were more likely to get pregnant. But it's not easy to say exactly how much treatment improved their chances of having a baby.

We didn't find any studies that compared IVF with no treatment in women with blocked or damaged tubes.

Another study found that IVF worked about the same as a treatment called intracytoplasmic sperm injection (ICSI) for couples with different kinds of infertility.^[97] About a quarter to a third of couples got pregnant each cycle.

A recent big review of 22 studies suggests that IVF works twice as well in women with blocked or damaged tubes as it does in [women with endometriosis](#).^[98]

Surgery for blocked or damaged tubes

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 surgery for blocked or damaged tubes?](#)

This information is for women who have fertility problems caused by blocked or damaged tubes. It tells you about surgery, a treatment used for these types of fertility problems. It is based on the best and most up-to-date research.

Fertility problems

Does it work?

If the scarring or blockage in your tubes is not serious, having surgery to repair or remove the damage can improve your chances of getting pregnant and having a baby.

But for most women with blocked or damaged tubes, [in vitro fertilisation \(IVF\)](#) is a better treatment.

If your tubes are swollen and full of fluid, having surgery before you have IVF can increase your chance of getting pregnant and having a baby.

What is it?

This is an operation where surgeons remove blockages or damaged areas in one or both of your fallopian tubes. The aim is to improve the chances of eggs getting from your ovaries to your womb.

Before in vitro fertilisation (IVF) was available, surgery was the only treatment for blocked or damaged tubes. But nowadays it's not used so much. Your doctor may suggest surgery if the damage to your tubes is slight. And if your tubes are swollen and filled with fluid, doctors may want to remove one or both of your tubes before you have IVF.

See [More about surgery for blocked or damaged tubes](#) to learn more.

How can it help?

If you have a small amount of scarring or a small blockage in your tubes, surgery may work as well as IVF. ^[99] ^[100] ^[101] ^[102] ^[103] It also has the advantage of letting you get pregnant more than once without having further medical treatment and the risks of IVF. ^[104]

Surgery works better for tubes that are blocked at the end near the womb, and not so well for tubes blocked at the end near the ovary.

And if you have fluid in your tubes and you have surgery to remove them before IVF, the IVF is more than twice as likely to work. ^[105]

There are different types of surgery. They all seem to work equally well. See [More about surgery for blocked or damaged tubes](#) to learn more.

How does it work?

When you get pregnant naturally, one of your eggs travels from your ovary to your fallopian tube, where it's fertilised by your partner's sperm. The fertilised egg then travels further down the tube to the womb, where the egg can start growing.

See [Getting pregnant: the woman's role](#) to read more.

Fertility problems

If your tubes are blocked or damaged, this can't happen. Having surgery to unblock or repair your tubes should allow the egg and sperm to make contact. And it should allow the fertilised egg to reach the womb.

If your tubes are swollen and full of fluid, the fluid can drain back down into the womb. This fluid can stop a fertilised egg growing in the womb. If you have one or both of your tubes taken out before you have IVF, the fluid goes away. So fertilised eggs should find it easier to grow in the womb.

Can it be harmful?

Any kind of surgery has risks. Having surgery on your tubes isn't more risky than other types of surgery.

When you have surgery, there's a small chance that you'll get:

- An infection
- Problems with bleeding.

If you have a **general anaesthetic**, there's also a small chance of:

- Problems with your breathing or circulation
- Blood clots
- An allergic reaction to the anaesthetic.

With this kind of surgery, complications are uncommon. Some people do die during or after surgery, but this is very rare. ^[106]

Ectopic pregnancy

Women with blocked or damaged tubes are more likely to have an ectopic pregnancy than women with healthy tubes. In an ectopic pregnancy, the fertilised egg starts to grow on the wall of the fallopian tube, instead of passing down into the womb. If doctors don't spot this, it can make the tube burst and can cause bleeding inside your abdomen. This can be fatal.

Women who have surgery for blocked tubes are more likely to have an ectopic pregnancy than women who have IVF without the surgery. ^[107] ^[108] If you have an ectopic pregnancy, it has to be ended medically, for your safety. ^[105]

How good is the research on surgery for blocked or damaged tubes?

Surgery before IVF

There's good evidence that having surgery on your [tubes](#) before you have a treatment called [IVF](#) (in vitro fertilisation) makes it more likely that the IVF will work.

We found a large summary of the research (called a [systematic review](#)) that included nearly 300 women. ^[105]

Women who had surgery on their tubes before having IVF were:

- More likely to get pregnant
- More than twice as likely to give birth.

Surgery on its own

There's less evidence for surgery used on its own. Studies where doctors follow individual couples (called [case control studies](#)) show that surgery can work as well as IVF for mild tube problems. ^{[109] [110] [111] [112] [113] [114]}

One large summary of the research (a systematic review) compared different types of surgery and found that they all worked equally well for getting pregnant. ^[115]

See [More about surgery for blocked or damaged tubes](#) to read about the different types of surgery.

Catheters for blocked or damaged tubes

In this section

[Do they work?](#)

[What are they?](#)

[How can they help?](#)

[How do they work?](#)

[Can they be harmful?](#)

[How good is the research on catheters for blocked or damaged tubes?](#)

This information is for women who have fertility problems caused by blocked or damaged tubes. It tells you about catheters, a treatment used for these types of fertility problems. It is based on the best and most up-to-date research.

Do they work?

We don't know. There isn't enough evidence to say whether a catheter can help women with [blocked or damaged tubes](#) get pregnant.

Fertility problems

What are they?

A catheter is a narrow tube that doctors can use to remove the blockage in your [fallopian tube](#). It's sometimes called a tubal catheter. This treatment isn't very common. It's done by specialists called radiologists.

To have this treatment, you'll need to go into hospital for an operation. You probably won't need a [general anaesthetic](#). Instead, doctors may give you a sedative to help you relax.

The doctor may use x-rays or [ultrasound](#) to guide the catheter.

Some doctors use a small telescope called a hysteroscope. This goes into your womb and helps the doctor see what's happening. But if your doctor wants to use a hysteroscope, you'll probably need a general anaesthetic.

Here's what happens:

- Doctors pass the catheter through your vagina and into your womb
- They carefully guide the catheter into your blocked fallopian tube
- At the point where the tube is blocked, doctors inject a type of dye up the catheter
- The pressure from the fluid should push the blockage out of the tube
- If the fluid doesn't move the blockage, doctors may pass a thin wire up into the tube to move the blockage.

How can they help?

We don't know if catheters can help. There's no evidence that women are more likely to become pregnant and give birth after having a catheter put in.

How do they work?

To get pregnant, one of your eggs has to travel down the fallopian tube and get fertilised there by your partner's sperm. And the fertilised egg must then travel to the end of the tube to the womb. These things can't happen if the tube is blocked or damaged. A catheter could unblock the tube.

Can they be harmful?

There's a 1 in 50 chance that a catheter will puncture your fallopian tube. But this kind of damage heals without causing any problems.

There's a small risk you may have an [ectopic pregnancy](#). In an ectopic pregnancy, the fertilised egg starts to grow on the wall of the fallopian tube, instead of passing down into the womb. If doctors don't spot this, it can make the tube burst and can cause bleeding

Fertility problems

inside your abdomen. This can be fatal. If you have an ectopic pregnancy, it has to be ended medically, for your safety. ^[116]

How good is the research on catheters for blocked or damaged tubes?

The only evidence we found for catheters was from **observational studies** . In these studies, researchers observe groups of people instead of randomly assigning them to receive certain treatments, or no treatment. These studies can suggest clues about whether a treatment works but can't provide clear evidence.

The studies compared different techniques for this treatment. But the studies couldn't say whether women were more likely to get pregnant if they had treatment with a catheter than if they had no treatment.

We found one large review that pulled together the results of some studies. ^[117] A total of 615 women had different types of surgery to treat [blocked or damaged tubes](#) . These studies included women who had tubes that were blocked at the end near the womb.

- About 1 in 5 women (21 percent) who were treated with a catheter became pregnant.
- But other types of surgery were more successful.

See [Surgery on tubes](#) to read more.

Hormone injections and insemination for women with endometriosis

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 hormone injections and insemination for women with endometriosis?](#)

This information is for women who have fertility problems caused by endometriosis. It tells you about hormone injections and insemination, treatments used for these types of fertility problems. It is based on the best and most up-to-date research.

Does it work?

Yes. If you've not been able to get pregnant because you have a condition called [endometriosis](#) , having both hormone injections and your partner's sperm put directly into your womb will increase your chances of having a baby.

Having the hormone injections before the sperm are put in gives you a better chance of getting pregnant than just having the sperm put in. But it increases your risk of having a multiple pregnancy.

Fertility problems

What is it?

Doctors treat the woman with hormones to boost her egg supply. Then around the time she is **ovulating**, doctors inject sperm from the male partner into her womb.

Hormone injections

Hormone injections contain **hormones** that are very similar to the hormones that your body makes normally.

You have your first injection when your **monthly cycle** starts. Then you have injections every day for up to 12 days. You or your partner will be taught how to give the injections. They are easy to do and are usually given in your thigh.

These are the types of hormone injections (and their brand names) you can have:

- follitropin alfa (Gonal-F)
- follitropin beta (Puregon)
- menotrophin (Menopur).

These injections contain different hormones. Read about [the different types of hormone injections](#).

Insemination

This is when doctors put sperm directly into the womb. Doctors call it **intrauterine insemination** (or IUI for short). You should be offered up to six cycles of insemination because this increases the chance of pregnancy.^[118]

Here's what happens:

- The man will be asked to masturbate to produce a sample of semen in the clinic
- The semen is washed and treated to remove unwanted cells
- Doctors monitor the woman with an **ultrasound** probe to see if she is **ovulating**
- Using a fine tube, they inject the treated semen up through the vagina and into the womb at around the time that the woman is ovulating.

How can it help?

If you have fertility problems because of endometriosis, you will be more likely to get pregnant and have a baby if you take hormones and get sperm put into the womb (intrauterine insemination), compared with doing nothing or just getting insemination.^[79]
^[119]

Fertility problems

In one study, more than 1 in 10 women who had hormones plus insemination got pregnant each cycle, compared with about 1 in 50 who just had insemination. ^[119]

Having sperm put into your womb once during a cycle when you're having hormone injections works just as well as having sperm put in twice. ^[120]

How does it work?

If you have [endometriosis](#), your chances of getting pregnant may be lower. Doctors aren't sure why.

Hormone injections can help you ovulate. They're designed to boost the number of eggs that are released during ovulation.

See [Getting pregnant: the woman's role](#) to learn more about ovulation.

When sperm are [ejaculated](#) into the vagina, only a small number swim up to the womb. So reducing their journey by putting them directly into a woman's womb may increase their chances of fertilising an egg.

Can it be harmful?

Hormone injections have some side effects. They happen because your ovaries overreact to the extra hormones. This is called **ovarian hyperstimulation syndrome** (OHSS). It can be mild or severe.

You may have mild symptoms such as:

- Having swollen legs or arms
- Putting on weight
- Feeling bloated.

Some more severe symptoms are:

- Feeling sick or vomiting
- Being out of breath
- Having problems with your [kidneys](#) or [liver](#).

But these side effects are rare. ^{[79] [119] [121]}

In very serious cases of OHSS, you may have heart and circulation problems. This can be dangerous and you may need to go to hospital. With hormone injections this is very rare.

Fertility problems

This treatment can cause you to have more than one baby (for example, twins or triplets). In one study, 1 in 5 women who took hormone injections had more than one baby.^[119]

How good is the research on hormone injections and insemination for women with endometriosis?

Two good studies (called [randomised controlled trials](#)) looked at about 150 couples with infertility caused by [endometriosis](#) .^[79] ^[119] During some cycles women got hormone injections plus sperm put directly into the womb (intrauterine insemination). During other cycles they got no treatment or just insemination.

The women who got hormones plus insemination were more likely to get pregnant each cycle. In one study, more than 1 in 10 women got pregnant, compared with about 1 in 50 who just had insemination.^[80]

One of the studies found that about one-quarter of the women who got pregnant after hormones plus insemination had a miscarriage.^[80] Another study found that this treatment worked about the same whether the sperm were injected into the womb once or twice during the woman's cycle.^[122]

Surgery for endometriosis

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 surgery for endometriosis?](#)

This information is for women who have fertility problems caused by endometriosis. It tells you about surgery, a treatment used for these types of fertility problems. It is based on the best and most up-to-date research.

Does it work?

If you have a condition called [endometriosis](#) , having surgery is likely to improve your chances of getting pregnant and having a baby. Surgery is more likely to help if your endometriosis is less widespread.

If you're deciding whether to have surgery for endometriosis, you need to consider the risks as well as the possible benefits.

What is it?

If you have endometriosis, it means that some of the tissue (the endometrium) that normally makes up the lining of your womb is growing around your [ovaries](#) or your [fallopian tubes](#) . This extra tissue can cause damage and scarring and can lower your chances of getting pregnant.

Fertility problems

Surgery aims to take out the damaged tissue.

If your endometriosis isn't too widespread, doctors may be able to remove the damaged tissue through small cut in your abdomen. This is called keyhole surgery or laparoscopic surgery.

See [More about surgery for endometriosis](#) .

How can it help?

Surgery to remove your endometriosis is likely to increase your chances of getting pregnant and having a baby. Here's what the research tells us:

- About 1 in 4 women who have surgery to remove their endometriosis go on to have a baby ^[123]
- One advantage of having surgery is that surgeons may be also able to find and treat other problems (such as scarring) that may be affecting your chances of getting pregnant. ^[123]

How does it work?

Doctors aren't sure why having endometriosis makes it less likely that you'll get pregnant. It may affect the egg or sperm. Or it may make it more difficult for the sperm to reach the egg.

By carefully removing damaged tissue around the ovaries or fallopian tubes, surgeons hope to improve the woman's chance of getting pregnant.

Can it be harmful?

Any kind of surgery has risks. When you have surgery, there's a small chance that you'll get:

- An infection
- Problems with bleeding.

If you have a **general anaesthetic** , there's a small added chance of:

- Problems with your breathing or circulation
- Blood clots
- An allergic reaction to the anaesthetic.

You may also get some scarring with this type of surgery. This is more likely if you have regular surgery rather than keyhole surgery.

Fertility problems

In the research we looked at, about 1 in 50 women having surgery for endometriosis had complications.^[123] Some people do die during or after surgery, but this is very rare.^[106]

How good is the research on surgery for endometriosis?

There is some good evidence that surgery for [endometriosis](#) can slightly increase the chances of a women getting pregnant.

One summary of the research (called a [systematic review](#)) involved more than 400 women with endometriosis.^[124] All of the women had keyhole surgery (laparoscopy) to look at their endometriosis. But only half of them had their endometriosis removed.

The women who had their endometriosis removed had about a 1 in 4 chance of getting pregnant afterwards, compared with a 1 in 5 chance for women who just had laparoscopy.

IVF for women with endometriosis

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 IVF for women with endometriosis?](#)

This information is for women who have fertility problems caused by endometriosis. It tells you about in vitro fertilisation (IVF), a treatment used for these types of fertility problems. It is based on the best and most up-to-date research.

Does it work?

Probably. There hasn't been a lot of research on in vitro fertilisation (IVF) for [endometriosis](#) , but there's some evidence that IVF is likely to help you get pregnant if you have this condition. How well IVF works depends in part on the clinic you go to and the woman's age. As women get older, they're less likely to get pregnant. See [What will happen?](#)

A recent study found that IVF doesn't work as well for women with endometriosis as it does for women with [blocked or damaged tubes](#) .^[125]

IVF is a very demanding treatment and it can have side effects.

What is it?

IVF stands for in vitro fertilisation. It's the most common form of **assisted reproductive technology** (or ART for short). This means that scientists in a laboratory use human eggs and sperm to help a couple have a baby.

Doctors normally suggest IVF when other treatments haven't worked. IVF can help couples with infertility caused by different reasons.^[8]

Fertility problems

Scientists mix the man's sperm with the woman's eggs in a laboratory. The sperm are allowed to join with the eggs. This is fertilisation. 'In vitro' means that it happens in a laboratory. Doctors then put back the fertilised eggs (now called embryos) into the woman's womb so that they can grow, just as in a normal pregnancy.

See [More about IVF](#) to read more.

IVF is sometimes used together with [intracytoplasmic sperm injection](#) (ICSI). ICSI involves injecting a single sperm directly into the egg. It's usually done if a man has problems with his sperm. It's also used sometimes as an add-on to standard IVF, especially if a first attempt at IVF hasn't worked.

How can it help?

We don't know how well IVF works if your infertility is caused by endometriosis. But we do know quite a lot about IVF in general.

- One study of couples with all types of infertility showed that IVF increases the chances of having a baby. But it may not work the first time. You may need to try IVF several times. ^[49]
- National figures show that infertile couples who have IVF have a 1 in 5 chance of having a baby after one attempt. ^[126] But we don't know how many of these women might have had a baby without IVF. Remember that this is an average, and your individual chances will depend partly on the clinic where you are having treatment.
- If possible, you should go to a big fertility clinic for IVF. Larger clinics (giving more than 200 treatment cycles a year) have higher rates of pregnancy than smaller ones. ^[38]
- IVF works best for women under 35. The chances of it working drop quickly once the woman has reached 35. ^[51]
- If you've had fertility problems for several years or have never been pregnant, you have less chance of having a baby with IVF. ^[51]

How does it work?

When a woman gets pregnant naturally, one of her eggs is fertilised by a man's sperm as the egg travels down her **fallopian tube**. The fallopian tubes carry eggs from the ovaries to the womb.

See [Getting pregnant: the woman's role](#) to read more about what happens normally.

If the ovaries or tubes are blocked or damaged because of endometriosis, the egg may not be able to leave the ovary. Or the sperm may not be able to reach the egg.

Fertility problems

By taking eggs out of a woman's ovaries and fertilising them in a laboratory, surgeons can bypass the damaged tubes or ovaries. The fertilised eggs can go straight into her womb, where they can grow as normal.

Even if endometriosis does not affect the tubes or ovaries, there may be other ways it affects a woman's chances of getting pregnant. Having IVF may help.

Can it be harmful?

IVF can have some serious side effects for the woman. You and your partner need to talk to your doctor about these side effects before deciding to try IVF.

Most of the symptoms happen because of the extra **hormones** that a woman needs to take before IVF to help her produce extra eggs. See [More about IVF](#) . Some common symptoms include:

- Feeling swollen or puffy
- Putting on weight
- Feeling bloated
- Having mild nausea.

These symptoms normally last only a week and you may feel better if you drink more fluid.

You may also have more serious side effects such as:

- Vomiting
- Pain in your abdomen
- Feeling out of breath.

If you have these symptoms, your doctor may advise you to rest and drink more fluid.

About 1 in 50 women (2 percent) who have IVF have serious problems that can affect their heart and circulation, lungs, **liver** or **kidneys** .^[54] Sometimes this is dangerous and you'll need to go into hospital.

Multiple pregnancy

If you have more than one embryo put into the womb, you may give birth to more than one child. This increases the chance of the IVF working, but more than one embryo might grow. Guidelines for doctors now say only one embryo should be put into the womb at the first attempt, unless there are no good quality embryos. Doctors working in the NHS are told not to put more than two embryos into the womb in one cycle of IVF.^[16]

Fertility problems

Some couples might welcome having more than one baby, rather than seeing it as a problem. But if you have three, four or more babies, there is a high risk of premature birth and the babies dying.

One study found that using hormone treatments before IVF can increase the chance of a baby being born with a low birth weight.^[56] The same study found that using hormone treatments before IVF does not increase the chance of premature birth.

Premature birth

Children born after IVF are more likely to be premature and with a low birth weight.^[55]

But this is probably due to the greater number of multiple pregnancies and the older age of women having IVF, rather than IVF itself. There is no evidence that babies born after IVF are more likely than average to be born with birth defects.^[94]

A big study that looked at the health of children born after IVF showed most children were healthy. But they were slightly more likely to need to go to hospital than children not born after IVF.^[58]

One study found that using hormone treatments before IVF can increase the chance of a baby being born with a low birth weight.^[56] The same study found that using hormone treatments before IVF does not increase the chance of premature birth.

How good is the research on IVF for women with endometriosis?

We can't say for sure that in vitro fertilisation (IVF) works for women with infertility associated with endometriosis. There hasn't been enough good research.

The main evidence for IVF comes from one high-quality study (called a randomised controlled trial) that included 399 couples with infertility caused by different reasons.^[49] Some of the couples had IVF straight away. Others waited six months before having IVF.

More women in the group having IVF straight away got pregnant. But the figures are hard to compare, because some of them got pregnant before they were scheduled to start treatment.

- Of the women in the group having IVF straight away, 10 in 100 got pregnant after treatment. Another 7 in 100 got pregnant before starting treatment.
- In the other group, 8 in 100 women got pregnant while awaiting treatment.
- There were more babies born in the group that had IVF. But that's partly because some of them had twins or quadruplets.

So the study shows that women having IVF were more likely to get pregnant. But it's not easy to say exactly how much treatment improved their chances of having a baby. There hasn't been any good-quality research looking at IVF for women just with endometriosis.

Fertility problems

We did find two studies that looked back at women who had IVF. This type of study is called a [cohort study](#). ^[127] ^[128]

- Women with endometriosis were just as likely to get pregnant with IVF as those with infertility due to other reasons.
- Women with more severe endometriosis were just as likely to get pregnant as women with mild endometriosis.

A recent big review of 22 studies suggests that IVF works twice as well in women with [blocked or damaged tubes](#) as it does in women with endometriosis. ^[125]

Hormone treatments for endometriosis

In this section

[Do they work?](#)

[What are they?](#)

[How can they help?](#)

[How do they work?](#)

[Can they be harmful?](#)

[How good is the research on hormone treatments for endometriosis?](#)

This information is for women who have fertility problems caused by endometriosis. It tells you about hormone treatments to slow down the spread of endometriosis. It is based on the best and most up-to-date research.

Do they work?

No. Hormone treatments to slow down the spread of [endometriosis](#) will not help you become pregnant. Also, these drugs have unpleasant side effects.

What are they?

Hormone treatments are used to help ease painful symptoms in women who have endometriosis.

You take a course of drugs, usually lasting about six months. The treatment stops your ovaries releasing eggs or producing hormones. This slows down the growth of the endometriosis.

There are many different types of hormone treatment. They include contraceptive pills. Some other examples (followed by brand name) are:

- danazol tablets (Danol)
- goserelin injections (Zoladex)
- leuprorelin injections (Prostap 3, Prostap SR).
- medroxyprogesterone tablets and injections (Provera, Depo-provera)

Fertility problems

- nafarelin nasal spray (Synarel).

How can they help?

They won't help. If you have endometriosis that is stopping you becoming pregnant, taking hormone treatments won't improve your chances of getting pregnant afterwards. ^[129]

And taking these drugs could waste valuable time when you might have become pregnant naturally.

How do they work?

Hormone treatments slow down the spread of endometriosis. So doctors thought that a course of these hormones might increase the chances of a woman getting pregnant afterwards. But this doesn't happen.

The drugs used to treat endometriosis work in different ways. But they all stop your ovaries releasing eggs or producing hormones.

Can they be harmful?

If you take these hormone treatments, you can get symptoms that you normally get at the menopause. These side effects happen because your body stops making oestrogen. The side effects include: ^[129]

- Hot flushes
- Putting on weight
- Thinning bones (osteoporosis).

Women who take danazol (Danol) are likely to get extra side effects because the drug is similar to the male hormone testosterone. These effects include:

- Putting on weight (2 to 4.5 kilograms or 5 to 10 pounds over three months)
- Acne
- Greasy skin
- Growing extra hair
- Voice changes
- Feeling irritable

Fertility problems

- Aches and pains
- Feeling tired.

Most of these effects go away when the treatment stops. ^[130]

While you're taking these hormone treatments, you can't get pregnant. This is a major drawback, especially if you're older and your chances of getting pregnant are less anyway. But you should start ovulating within a month or two of stopping treatment.

How good is the research on hormone treatments for endometriosis?

We found one large summary (a [systematic review](#)) that looked at many high-quality studies called [randomised controlled trials](#). ^[129]

Women who took hormone treatments to slow down the growth of their [endometriosis](#) were no more likely to get pregnant than women who took no treatment. And women who took hormones had side effects like weight gain, hot flushes, and thinning of the bones.

Injecting sperm into the womb when the man is infertile

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 injecting sperm into the womb when the man is infertile?](#)

This information is for couples who have fertility problems caused by male infertility. It tells you about injecting sperm into the womb, a treatment used for these types of fertility problems. It is based on the best and most up-to-date research.

Does it work?

Yes. When the male partner has fertility problems caused by a low sperm count or poor-quality sperm, this treatment more than doubles the chances of the woman becoming pregnant.

It also works twice as well as another similar treatment where doctors put sperm into the neck of the womb.

What is it?

This is when doctors put sperm directly into the womb. Doctors call it **intrauterine insemination** (or IUI for short).

Guidelines for doctors say that you should be offered up to six cycles of insemination because this increases the chance of pregnancy. ^[24]

Fertility problems

Here's what happens:

- The man will be asked to masturbate to produce a sample of semen in the clinic
- The semen is washed and treated to remove unwanted cells
- Doctors monitor the woman with an **ultrasound** probe to see if she is **ovulating**
- Using a fine tube, they inject the treated semen up through the vagina and into the womb at around the time that the woman is ovulating.

Sometimes doctors inject the sperm into the neck of the womb instead. This is called **intra-cervical insemination**. It's less painful than injecting sperm right into the womb.

Sometimes the woman may have hormone treatments to help her ovulate, especially if she is not ovulating regularly. Common hormone treatments are:

- [Clomifene](#) (Clomid)
- [Hormone injections](#)

How can it help?

Couples who have this treatment are twice as likely to get pregnant during each menstrual cycle as those who have sex naturally. ^[131]

Having the sperm injected right into the womb works twice as well as having it injected into the neck of the womb. ^[131]

We're not sure if it increases the chances of pregnancy to have more than one sample of sperm out in the womb during a menstrual cycle. There's not enough research to say.

However, not all studies showed that injecting sperm helped more than having sex normally. ^[132]

How does it work?

Sperm injected into the womb don't have to swim so far to get to the fallopian tubes to fertilise the egg. They also don't have to get through the acid fluid in the vagina, which kills a high proportion of sperm, or the mucus at the neck of the womb. Preparing the semen before they're injected means only the best sperm are used.

All this is important if you're a man with a low sperm count or have sperm that are not good swimmers. If the woman has hormone treatment, this will boost the number of eggs released. This gives the sperm an even better chance since they can target not one but several eggs.

Can it be harmful?

Doctors have to widen the neck of the womb to inject the sperm in, which can be uncomfortable. And you may have cramps when chemicals in the semen come into direct contact with the womb, although treating the semen beforehand reduces this problem.

[8]

Injecting the sperm into the womb slightly increases the chance the woman will get an infection.

Both [clomifene](#) and [hormone injections](#) can have side effects.

How good is the research on injecting sperm into the womb when the man is infertile?

Lots of studies have looked at injecting sperm into the womb (intrauterine insemination) as a treatment for couples where the man is infertile (for example, he has a low sperm count or sperm that aren't good swimmers).

We found two large summaries of the research (called [systematic reviews](#)). [131] [132] These looked at the results of 27 high-quality studies (called [randomised controlled trials](#)). Many of the couples in these studies tried the treatments more than once.

In the first review:

- Injecting sperm directly into the womb worked twice as well as injecting sperm into the neck of the womb.
- More than 6 in 100 couples having this treatment got pregnant each menstrual cycle. [131]
- Couples were more likely to get pregnant if they had sperm put directly into the womb than if they had no treatment.

But the second review said the research wasn't good enough to be sure that insemination works. [132] It also looked at whether having **hormone treatments** before injecting sperm into the womb increased couples' chances of getting pregnant. [133] Women were just as likely to get pregnant when they had sperm put into their womb whether or not they had hormone treatment.

ICSI and IVF when the man is infertile

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

Fertility problems

[How good is the research on ICSI and IVF when the man is infertile?](#)

This information is for couples who have fertility problems caused by male infertility. It tells you about intracytoplasmic sperm injection (ICSI) and in vitro fertilisation (IVF), treatments used for these types of fertility problems. It is based on the best and most up-to-date research.

Does it work?

Yes. If a man has [problems with his sperm](#), a treatment called **ICSI** (short for intracytoplasmic sperm injection) increases the chances of his sperm fertilising the woman's egg.

Having both ICSI and [IVF](#) (in vitro fertilisation) means that more of the woman's eggs get fertilised than if she has IVF without ICSI.

If you're thinking about trying ICSI, you should talk to your doctor about the possible risks to your baby. Researchers aren't certain, but there is concern that ICSI may increase the risk of some serious disorders.

What is it?

ICSI stands for intracytoplasmic sperm injection. You have it in addition to a treatment called [IVF](#) (in vitro fertilisation). ICSI and IVF are types of **assisted reproduction technology** (or ART for short). This means that scientists in a lab use human eggs and sperm to help a couple have a baby.

Scientists inject one of a man's sperms into the main part of a woman's egg. The sperm is allowed to join with the egg. This is fertilisation. If the egg grows into a healthy embryo, doctors put it into the woman's womb so that it can grow, just as in a natural pregnancy.

See [Getting pregnant: the woman's role](#) to read more about fertilisation and normal pregnancy.

If you decide to have ICSI, the man will need to give doctors a sample of his semen. If there are no sperm in the man's semen, doctors can take sperm directly from the man's testicle or from the tube where sperm is stored.

To read more about how sperm are made, see [Getting pregnant: the man's role](#).

Doctors then take sperm from the semen and choose one healthy sperm. In the lab, they inject the single sperm through the outer wall of the egg. If the sperm joins with (fertilises) the egg to form a healthy embryo, doctors put this into the womb in the same way as for [IVF](#).

Doctors often recommend ICSI if IVF hasn't worked. Sometimes, doctors will recommend ICSI once the laboratory has looked at the man's semen. The laboratory will prepare a semen sample for IVF. But if they think ICSI is more likely to work than IVF, they may suggest the couple use ICSI instead.

Fertility problems

You may prefer to try ICSI rather than use [donor sperm](#) . Many couples want a child who is biologically related to both of them. ^[96]

How can it help?

There haven't been any studies looking at ICSI and IVF compared with doing no treatment. But we've looked at national statistics about IVF in general.

Couples who have IVF, with or without ICSI have a 1 in 5 chance of having a baby after one attempt. ^[134]

Your individual chances will depend on the clinic where you are treated. IVF, with or without ICSI, works best for women under 35. A third of women under 35 get pregnant after one cycle of IVF. ^[134] Only 1 in 10 women aged 40 to 42 get pregnant from one cycle of IVF.

But we don't know how many of these women might have had a baby without ICSI or IVF. And these figures don't show whether having ICSI and IVF is better than IVF on its own.

How does it work?

Some men don't have enough sperm in their semen. And others make sperm that are abnormal in some way. See [Problems with sperm](#) to read more.

Having one of these problems will lower your chances of getting pregnant because the sperm might not be able to swim up to the egg. Or there may not be enough sperm for there to be a good chance that one will reach the egg.

With ICSI, the sperm is put right into the egg, so it doesn't have to swim to the egg or rely on luck to find the egg. So there's a good chance that the egg will be fertilised and you'll get pregnant.

Can it be harmful?

If you're thinking about trying ICSI, you should talk to your doctor about the possible risks to your baby.

These risks are not certain as some studies show little or no difference between children born through ICSI and IVF and those who are conceived without medical help. ^[135]

But there is some evidence that children born as a result of ICSI are more likely to have: ^[95]

- Serious heart or circulation problems
- Abnormal testicles
- Cleft palate

Fertility problems

- Certain types of hernia (when part of the body pushes through a weak point in a muscle).

There is also some evidence that children born as a result of ICSI may have something wrong with their chromosomes (the genetic material inside every cell) or slower mental development than those born after standard IVF. ^[136] This is more common in boys. ^[96]

If you're considering having ICSI, it's important that you have [counselling](#) about the risks.

A big study that looked at the health of children born from IVF showed most children were healthy. But they were slightly more likely to need to go to hospital than children not born by IVF. ^[58]

The main reason why some children born by IVF have health problems is that they are more likely to be twins or triplets. Twins or triplets often have more health problems than single pregnancies. But twins and triplets born by IVF have no more health problems than twins and triplets born naturally.

To read more about the risks of IVF, see [IVF when the man is infertile](#) .

How good is the research on ICSI and IVF when the man is infertile?

ICSI is a new technique. It stands for intracytoplasmic sperm injection. Specialists are still learning about this treatment and are always trying to make it better.

So success rates reported only a few years ago may not be relevant to couples who are considering the treatment today.

We found one summary of the research (called a [systematic review](#)) that looked at the results of 10 high-quality studies (called [randomised controlled trials](#)). ^[92] The studies included 437 couples. Some couples tried ICSI and others had standard in vitro fertilisation (IVF).

- If the man had normal sperm, ICSI didn't increase the chance of pregnancy compared with IVF.
- If the man had any [problems with his sperm](#) , ICSI did increase the chance of fertilisation compared with IVF.
- If the man had borderline semen quality (10 million to 20 million sperm per millilitre of semen, 30 in 100 to 50 in 100 mobile sperm and 4 in 100 to 14 in 100 sperm with normal appearance), fertilisation was about four times more likely following ICSI compared with IVF alone.
- Some studies suggest that ICSI might also help men with very poor semen quality (less than 10 million sperm per millilitre of semen, less than 30 in 100 mobile sperm and less than 4 in 100 sperm with normal appearance).

Fertility problems

All the studies looked at how likely the treatments were to result in fertilisation, not the number of pregnancies or live births. We don't know if you're more likely to have a baby if you try ICSI, compared with [standard IVF](#) .

Couples who have IVF, with or without ICSI, have a 1 in 5 chance of having a baby after one attempt.^[38] We don't know how many of these women might have had a baby without ICSI or IVF. And we don't know whether having ICSI and IVF is better than having IVF on its own.

We also found one summary of research (called a [systematic review](#)) that looked whether ICSI could harm the baby.^[135] The review included 30 [observational studies](#) . The studies showed that children born after ICSI were slightly more likely to have birth defects. But the increase in risk was very small. The studies didn't show whether there was an increased risk of babies being born with something wrong with their chromosomes.

Donor sperm when the man is infertile

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 donor sperm when the man is infertile?](#)

This information is for couples who have fertility problems caused by male infertility. It tells you about using sperm from a donor. It is based on the best and most up-to-date research.

Does it work?

If the man is infertile and the woman has no fertility problems, then you might want to consider using donor sperm.

Doctors know that this treatment is likely to work. But there haven't been any studies to find out how well it works.

You and your partner may need help to decide whether using donor sperm is right for you. And you may need counselling about the legal aspects of having a child with someone else's sperm. Many infertility counsellors can offer you this help. See [infertility counselling](#) to read more.

If you use donor sperm, it means the male partner will not be the baby's biological father.

In April 2005 the law about egg and sperm donation changed in the UK. Anyone who donates their eggs or sperm must give information about themselves. This information can be made available to a child born from the sperm or eggs once he or she is aged 18 or older.^[137]

Fertility problems

What is it?

Donor sperm is sperm from another man. Doctors call it **artificial insemination by donor** (AID for short).

The sperm sample will have been tested for infections and diseases, including **HIV**. It will have been frozen. It will also have been treated to remove other cells.

The donor sperm needs to be put inside the woman when she is **ovulating** (when her ovaries have released an egg). Doctors use an **ultrasound** probe to check when the woman is **ovulating**.

Using a narrow tube, doctors put the treated donor sperm into the womb. Sometimes doctors inject the sperm into the neck of the womb instead. This is less painful than putting it right into the womb.

Sometimes the woman may have [hormone treatments](#) to help her ovulate, especially if she is not ovulating regularly. Common hormone treatments (and their brand names) are:

- [Clomifene](#) (Clomid)
- [Hormone injections](#) (Gonal-F, Menopur, Puregon)

If donor sperm treatment doesn't work after six to nine attempts, your doctor should offer you other forms of treatment. ^[138]

How can it help?

If you use donor sperm, you have about a 1 in 10 chance of getting pregnant after one treatment. ^[139] ^[140]

But we don't know how this compares with other treatments for infertility. And we don't know whether this treatment works better than no treatment at all.

You have more chance of getting pregnant if the donor sperm are put into your womb, rather than in the neck of your womb. ^[141]

How does it work?

For a woman to get pregnant, her egg needs to be fertilised by sperm.

If the man is not producing sperm or is making sperm that are not mobile or healthy enough to travel through the womb, then using someone else's sperm may help.

Can it be harmful?

There is no good evidence that using donor sperm is harmful.

Fertility problems

Some women have hormone treatments before trying donor sperm. Hormone treatments can have side effects. See [clomifene](#) and [hormone injections](#) to find out more.

How good is the research on donor sperm when the man is infertile?

The main evidence about using donor sperm comes from national records of the success of treatment. Each time you try donor sperm you have a 1 in 10 chance that you'll get pregnant and have a baby.^[140] ^[142]

We also found a big summary (a [systematic review](#)) of the research.^[141] This summary looked at four high-quality studies called [randomised controlled trials](#). The studies included 208 women who tried using donor sperm. Women were more likely to become pregnant if the sperm were put into their womb than if they were put into the neck of their womb.

IVF when the man is infertile

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 IVF when the man is infertile?](#)

This information is for couples who have fertility problems caused by male infertility. It tells you about in vitro fertilisation (IVF), a treatment used for these types of fertility problems. It is based on the best and most up-to-date research.

Does it work?

We don't know whether in vitro fertilisation (IVF) helps couples who haven't been able to get pregnant because of a problem with the man's sperm. But there is some evidence that IVF can help infertile couples.

How well IVF works depends, in part, on the clinic you go to and the woman's age. As women get older, they're less likely to get pregnant.

IVF is a very demanding treatment and it can have side effects.

What is it?

IVF is the most common form of **assisted reproductive technology** (or ART for short). This means that scientists in a laboratory use human eggs and sperm to help a couple have a baby.

Doctors normally suggest IVF when other treatments haven't worked. IVF can help couples with infertility caused by different reasons.^[8]

Scientists mix the man's sperm with the woman's eggs in a laboratory. The sperm are allowed to join with the eggs. This is fertilisation. 'In vitro' means that it happens in a

Fertility problems

laboratory. Doctors then put back the fertilised eggs (now called embryos) into the woman's womb so that they can grow, just as in a normal pregnancy.

See [More about IVF](#) .

IVF is sometimes used together with [intracytoplasmic sperm injection](#) (ICSI). ICSI involves injecting a single sperm directly into the egg.

How can it help?

There's no research comparing IVF with having no treatment when the man is infertile (he has problems with his sperm). But we do know quite a lot about IVF in general.

- One study of couples with all types of infertility showed that IVF increases the chances of having a baby. But it may not work the first time. You may need to try IVF more than once. ^[49]
- National figures show that infertile couples who have IVF have a 1 in 5 chance of having a baby after one attempt. ^[143] But we don't know how many of these women might have had a baby without IVF. Remember that this is an average figure, and your individual chances will depend partly on the clinic where you are having treatment.
- When you're choosing a clinic, look at the success rates for the type of treatment you're having and for your age group. ^[144]
- IVF works best for women under 35. The chances of it working drop quickly once the woman has reached 35. ^[51]
- If you've had fertility problems for several years or have never been pregnant, you have less chance of having a baby with IVF. ^[51]

How does it work?

For a woman to become pregnant, one of her eggs must be fertilised by a man's sperm. The sperm have to swim up from the vagina, through the neck of the womb and into the fallopian tube .

See [Getting pregnant: the woman's role](#) to read more about what happens normally.

Usually some of the sperm are strong enough to reach the egg in the fallopian tube. One of the sperm joins with (fertilises) the egg.

But if the man doesn't make enough sperm or the sperm don't move properly, it's less likely that one of them will reach the egg.

Fertility problems

Having IVF means that the sperm don't have to swim to reach the egg. By taking sperm from the man and mixing it directly with eggs in the lab, it's probably more likely that one or more of the eggs will be fertilised.

Can it be harmful?

IVF can cause some serious side effects for the woman. You and your partner need to talk through these with your doctor before deciding whether to have treatment.

The hormones that the woman takes to make her produce extra eggs for IVF make the ovaries overreact. How serious this is depends on the type of hormone treatment the woman has.

Mild symptoms include:

- Fluid retention
- Thirst
- Weight gain
- Bloating and discomfort
- Mild nausea.

You should recover fully from this within a week and you may feel better if you drink more fluid.

You may also have more marked symptoms including:

- Vomiting
- Abdominal pain
- Breathlessness.

You may be advised to rest and drink more fluid.

About 1 in 50 women (2 percent) have more serious problems that can affect the heart and circulation, lungs, liver or kidneys. Sometimes this is dangerous and you may need to go to hospital. ^[54]

Having twins or triplets

If you have IVF, you may give birth to more than one child. This is because doctors may put two embryos back into the womb. ^[38] This increases the chance of the IVF working, but it might work 'too well'.

Fertility problems

In the UK, the chance of having twins after IVF treatment is about 1 in 4.^[145] The chance of having triplets is much less, about 1 in 50.

Some couples might welcome having more than one baby, rather than seeing it as a problem. But if you have three, four or more babies, there is a high risk of premature birth and the babies dying.

One study found that using hormone treatments before IVF can increase the chance of a baby being born with a low birth weight.^[56] The same study found that using hormone treatments before IVF does not increase the chance of premature birth.

Premature birth

Children born after IVF are more likely to be premature and with a low birth weight.^[55]

But this is probably due to the greater number of multiple pregnancies and the older age of women having IVF, rather than to IVF itself. There's no evidence that babies born after IVF are more likely to be born with birth defects.^[94]

A big study that looked at the health of children born after IVF showed most children were healthy. But they were slightly more likely to need to go to hospital than children not born after IVF.^[58]

One study found that using hormone treatments before IVF can increase the chance of a baby being born with a low birth weight.^[56] The same study found that using hormone treatments before IVF does not increase the chance of premature birth.

How good is the research on IVF when the man is infertile?

The main evidence for in vitro fertilisation (IVF) comes from one high-quality study (called a randomised controlled trial) that included 399 couples with infertility caused by different reasons.^[49] Some of the couples had IVF straight away. Others waited six months before having IVF.

More women in the group having IVF straight away got pregnant. But the figures are hard to compare, because some of them got pregnant before they were scheduled to start treatment.

- Of the women in the group having IVF straight away, 10 in 100 got pregnant after treatment. Another 7 in 100 got pregnant before starting treatment.
- In the other group, 8 in 100 women got pregnant while awaiting treatment.
- There were more babies born in the group that had IVF. But that's partly because some of them had twins or quadruplets.

So the study shows that women having IVF were more likely to get pregnant. But it's not easy to say exactly how much treatment improved their chances of having a baby.

Fertility problems

We found one study (also a randomised controlled trial) that included men who were infertile. ^[146] But this study was small. Some couples had IVF and others had a similar treatment called GIFT (gamete intrafallopian transfer). In all the couples, the man had a fertility problem.

- 2 of the 7 couples who had IVF became pregnant.
- 2 of the 6 couples who had GIFT became pregnant.

With such a small amount of evidence, we can't say whether IVF or GIFT is better when the man has a fertility problem.

Hormone treatments and insemination for unexplained infertility

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 hormone injections and insemination for unexplained infertility?](#)

This information is for couples who have unexplained infertility. It tells you about hormone treatments and insemination, treatments sometimes used together for unexplained infertility. It is based on the best and most up-to-date research.

Does it work?

Yes. If you and your partner have [unexplained infertility](#) , having these two treatments makes it more likely that you'll get pregnant.

Both treatments on their own improve your chances of getting pregnant. But used together they increase your chances further. However, doctors in the UK are advised not to offer either of these treatments for unexplained fertility. Instead they are advised to recommend couples try to conceive for two years, then consider IVF treatment. ^[7]

What is it?

Doctors treat the woman with hormones to boost her egg supply. Then around the time she is **ovulating** , doctors inject sperm from the male partner into the womb.

Hormone treatments

Doctors normally use [hormone injections](#) for this treatment, although sometimes they use a drug called [clomifene](#) .

Hormone injections contain **hormones** that are very similar to the hormones that your body makes normally.

Fertility problems

You have your first injection when your [monthly cycle](#) starts. Then you have injections every day for up to 12 days. You or your partner will be taught how to give the injections. They are easy to do and are usually given in your thigh.

These are the types of hormone injections (and their brand names) you can take:

- follitropin alfa (Gonal-F)
- follitropin beta (Puregon)
- menotrophin (Menopur)
- urofollitropin (Fostimon)

These injections contain different hormones. Read about [the different types of hormone injections](#) .

Clomifene is a tablet that you take for five days, early in your monthly cycle. Its brand name is Clomid. The standard dose is 50 milligrams (mg) or 100 milligrams each day.

Clomifene is similar to oestrogen, one of the **hormones** that control your monthly cycle.

See [What happens every month](#) to find out more about oestrogen and your monthly cycle.

Insemination

You should be offered up to six cycles of insemination because this increases the chance of pregnancy.^[7]

Insemination is when doctors put sperm directly into the womb. Doctors call it intrauterine insemination (or IUI for short).

Here's what happens:

- The man will be asked to masturbate to produce a sample of semen in the clinic
- The semen is washed and treated to remove unwanted cells
- Doctors monitor the woman with an **ultrasound** probe to see if she is **ovulating**
- Using a fine tube, they inject the treated semen up through the vagina and into the womb at around the time that the woman is ovulating
- Sometimes doctors inject the sperm into the neck of the womb instead (this is less painful than putting it right into the womb).

Fertility problems

Fallopian tube sperm perfusion

This is a new way of injecting sperm. Doctors inject a larger amount of liquid (but containing the same amount of sperm) into the womb, close to the start of the fallopian tube. The idea is that the sperm then have a better chance of washing up the tube and meeting the egg. Sometimes doctors also temporarily block the cervix (neck of the womb), so that the sperm can't wash out into the vagina. Research comparing fallopian tube sperm perfusion with insemination into the womb has shown they seem to work about as well as each other. But we need more research to be sure. ^[147]

How can it help?

If you and your partner have both of these treatments you're more than twice as likely to get pregnant, compared with hormone treatment alone. ^[148] ^[149]

About 1 in 5 couples who have sperm injected into the womb plus hormone treatment become pregnant each cycle of treatment, compared with about 1 in 10 couples who have hormone treatment alone. ^[150]

Having sperm injected into the womb without hormone treatments also increases your chances of getting pregnant. But it works better with hormone treatment too. ^[148]

If doctors use fallopian tube sperm perfusion as well, the chances of getting pregnant are higher. ^[151]

We don't know if having more than one sperm sample put in increases the chances of pregnancy. More research is needed to say.

How does it work?

Hormone injections can help you ovulate. They're designed to boost the number of eggs that are released during ovulation.

See [Getting pregnant: the woman's role](#) to learn more about ovulation.

When sperm are ejaculated into the vagina, only a small number swim up to the womb. So, reducing their journey by putting them directly into a woman's womb might increase their chances of fertilising an egg.

Can it be harmful?

Hormone injections have some side effects. They happen because your ovaries overreact to the extra hormones.

You're more likely to get side effects if you have hormone injections than if you take a drug called [clomifene](#).

A side effect of hormone injections is called **ovarian hyperstimulation syndrome** (OHSS). It can be mild or severe. ^[67]

Fertility problems

Mild symptoms include:

- Swelling in your legs or arms
- Putting on weight
- Feeling bloated.

About 1 in 10 women (8 percent) get more serious side effects such as:

- Feeling sick or vomiting
- Being out of breath
- Having problems with their **kidneys** or **liver** .

The risk of side effects is less if you have injections with a lower dose of a hormone called follicle-stimulating hormone (FSH).^[152] See [Types of hormone injection](#) .

Multiple pregnancy

Hormone injections also increase your chances of having twins or triplets because they make you release more than one egg.

One study of women with a condition called [polycystic ovary syndrome](#) who had the standard hormone injections to help them ovulate found that nearly one-third had a multiple pregnancy.^[67]

Some couples might welcome having more than one baby, rather than seeing it as a problem. But if you have three, four, or more babies, there is a high risk of premature birth and the babies dying. For this reason, doctors in the UK are advised to inject sperm into the womb without giving the woman hormone treatment first.

Infection

Injecting sperm into the womb may increase the woman's risk of infection and cause discomfort. Doctors have to widen the neck of the womb to inject the sperm sample, and chemicals within semen can cause cramps when they come into direct contact with the womb. Treating the semen before it is injected reduces this problem.^[8]

How good is the research on hormone injections and insemination for unexplained infertility?

There's a lot of evidence that having hormone injections and insemination (injecting sperm into the womb) can help couples who have [unexplained infertility](#) .

However, doctors in the UK are advised not to offer this combined treatment as it increases the chance of having twins or triplets.

Fertility problems

We found three large summaries of the research (called [systematic reviews](#)) that looked at the results of more than 15 studies. ^[148] ^[149] ^[150] Some couples tried insemination after hormone injections. Others had hormone injections only and then had sex around the time of ovulation.

- Women who had hormone injections and then had sperm put into their womb were more likely to get pregnant than women who had hormone injections only.

We found a fourth large review with mixed results. ^[131]

- Injecting sperm directly into the womb or the neck of the womb didn't work any better than having sex around the time the woman was ovulating.
- But some of the women in the studies didn't have hormone injections. The women who did had better results, whether they had sex or insemination.

Different types of insemination

We found one other high-quality study (called a [randomised controlled trial](#)). ^[153] This study included 932 couples. Some of the women had sperm put directly into their womb. Others had sperm put into the neck of their womb. Some of the women also had hormone treatment.

- Women who had sperm put directly into their womb were about three times more likely to get pregnant than women who had sperm put into the neck of their womb.

Fallopian tube sperm perfusion

We found one large summary of the research on fallopian tube sperm perfusion. ^[151] The review looked at the results of five high-quality studies (randomised controlled trials). The studies included couples with unexplained infertility who had taken hormone injections or [clomifene](#).

- About 2 out of 10 couples (22 percent) who had fallopian tube sperm perfusion became pregnant.
- About 1 out of 10 couples (13 percent) who had standard insemination became pregnant.

IVF for unexplained infertility

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

[Can it be harmful?](#)

Fertility problems

[How good is the research on IVF for unexplained infertility?](#)

This information is for couples who have unexplained infertility. It tells you about in vitro fertilisation (IVF), a treatment used for unexplained infertility. It is based on the best and most up-to-date research.

Does it work?

We don't know whether in vitro fertilisation (IVF for short) works for couples who have [unexplained infertility](#) . If you have unexplained infertility, it means doctors don't know why you can't get pregnant.

But there is some evidence that IVF can help infertile couples generally. How well IVF works depends partly on the clinic you go to and the woman's age. As you get older, you're less likely to get pregnant.

IVF is a very demanding treatment and it can have side effects.

What is it?

IVF stands for in vitro fertilisation. It's the most common form of **assisted reproductive technology** (or ART for short). This means that scientists in a lab use human eggs and sperm to help a couple have a baby.

Doctors normally suggest IVF when other treatments haven't worked. IVF can help couples with infertility caused by different reasons. ^[8]

Scientists mix the man's sperm with the woman's eggs in a lab. The sperm are allowed to join with the eggs. This is fertilisation. 'In vitro' means that it happens in a laboratory. Doctors then put back the fertilised eggs (now called embryos) into the woman's womb so that they can grow, just as in a normal pregnancy.

See [More about IVF](#) .

IVF is sometimes used together with [intracytoplasmic sperm injection](#) (ICSI). ICSI involves injecting a single sperm directly into the egg. It's usually done if a man has problems with his sperm. It's also used sometimes as an add-on to standard IVF, especially if a first attempt at IVF hasn't worked.

How can it help?

We don't know whether IVF works for couples with unexplained infertility, as there hasn't been much good research. One small study of such couples found IVF didn't work any better than having sex. ^[154]

The same study also found that IVF works about the same as two other treatments: [GIFT](#) (gamete intrafallopian transfer) and [hormone injections and insemination](#) .

There haven't been any other studies looking at IVF for couples with unexplained infertility. But here's what we know about IVF in general:

Fertility problems

- One study of couples with all types of infertility showed that IVF increases the chances of having a baby. But it may not work the first time. You may need to try IVF several times. ^[49]
- National figures show that infertile couples who have IVF have a 1 in 5 chance of having a baby after one attempt. ^[155] But we don't know how many of these women might have had a baby without IVF. Remember that this is an average and your individual chances will depend partly on the clinic where you are having treatment.
- IVF works best for women under 35. The chances of it working drop quickly once the woman has reached 35. ^[51]
- If you've had fertility problems for several years or have never been pregnant, you have less chance of having a baby with IVF. ^[51]
- If possible, you should go to a big fertility clinic for IVF. Larger clinics (giving more than 200 treatment cycles a year) have higher rates of pregnancy than smaller ones. ^[38]

How does it work?

When a woman gets pregnant naturally, one of her eggs is fertilised by a man's sperm as the egg travels down her fallopian tube. The fallopian tubes carry eggs from the ovaries to the womb.

See [Getting pregnant: the woman's role](#) to read more about what happens normally.

If you have unexplained infertility, it could be that one or more of these stages aren't working. So by mixing sperm with eggs in a laboratory and putting them directly into the womb, these problems could be avoided.

Can it be harmful?

IVF can have some serious side effects for the woman. You and your partner need to talk to your doctor about these side effects before deciding to try IVF.

Most of the symptoms happen because of the extra **hormones** that a woman takes before IVF to help her make extra eggs. See [More about IVF](#). Some common symptoms include:

- Feeling swollen or puffy
- Putting on weight
- Feeling bloated

Fertility problems

- Having mild nausea.

These symptoms normally last only a week and you may feel better if you drink more fluid.

You may also have more serious side effects such as:

- Vomiting
- Pain in your abdomen
- Feeling out of breath.

If you have these symptoms, your doctor may advise you to rest and drink more fluid.

About 1 in 50 women (2 percent) who have IVF have serious problems that can affect their heart and circulation, lungs, liver or kidneys . If this happens, you may need to go to hospital. ^[54]

Multiple pregnancy

If you have more than one embryo put into the womb, you may give birth to more than one child. This increases the chance of the IVF working, but more than one embryo might grow. Guidelines for doctors now say only one embryo should be put into the womb at the first attempt, unless there are no good quality embryos. Doctors working in the NHS are told not to put more than two embryos into the womb in one cycle of IVF. ^[16]

Some couples might welcome having more than one baby, rather than seeing it as a problem. But if you have three, four or more babies, there is a high risk of premature birth and the babies dying.

Premature birth

Children born after IVF are more likely to be premature and with a low birth weight. ^[55]

But this is probably due to the greater number of multiple pregnancies and the older age of women having IVF, rather than to IVF itself. There's no evidence that babies born after IVF are more likely to be born with birth defects. ^[94]

A big study that looked at the health of children born after IVF showed most children were healthy. But they were slightly more likely to need to go to hospital than children not born after IVF. ^[58]

One study found that using hormone treatments before IVF can increase the chance of a baby being born with a low birth weight. ^[56] The same study found that using hormone treatments before IVF does not increase the chance of premature birth.

How good is the research on IVF for unexplained infertility?

The main evidence for IVF comes from one high-quality study (called a [randomised controlled trial](#)) that included 399 couples with infertility caused by different reasons. ^[49] Some of the couples had IVF straight away. Others waited six months before having IVF.

More women in the group having IVF straight away got pregnant. But the figures are hard to compare, because some of them got pregnant before they were scheduled to start treatment.

- Of the women in the group having IVF straight away, 10 in 100 got pregnant after treatment. Another 7 in 100 got pregnant before starting treatment.
- In the other group, 8 in 100 of women got pregnant while awaiting treatment.
- There were more babies born in the group that had IVF. But that's partly because some of them had twins or quadruplets.

So the study shows that women having IVF were more likely to get pregnant. But it's not easy to say exactly how much treatment improved their chances of having a baby.

Not much research has been done on using IVF for couples with [unexplained infertility](#) . We did find a summary of studies, called a [systematic review](#) , that compared (IVF) with other treatments. ^[156] It looked at the results of five good studies (randomised controlled trials) that included a total of 353 women.

- In a study of 35 women, those who had IVF were no more likely to become pregnant than those who tried to conceive without medical help.
- In three studies with a total of 231 women, those who had IVF were no more likely to have a baby than those who had the man's [sperm put into their womb](#) .
- In a study of 69 women, those who had IVF were as likely to have a baby as those who had [GIFT \(gamete intrafallopian transfer\)](#) .
- Although these studies were good quality, they may not have been able to show differences in pregnancy rates between the different treatments.

GIFT for unexplained infertility

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 GIFT for unexplained infertility?](#)

Fertility problems

This information is for couples who have unexplained infertility. It tells you about gamete intrafallopian transfer (GIFT), a treatment used for unexplained infertility. It is based on the best and most up-to-date research.

Does it work?

We don't know for sure. There's some evidence that a treatment called GIFT (or gamete intrafallopian transfer) improves some couples' chances of getting pregnant. But we don't know whether GIFT helps couples with [unexplained infertility](#). If you have unexplained infertility, it means that doctors don't know why you can't get pregnant.

And we don't know whether GIFT works better than other treatments, such as [IVF](#) (in vitro fertilisation).

What is it?

GIFT stands for gamete intrafallopian transfer. It's a type of **assisted reproductive technology** (or ART for short). This means that scientists in a lab use human eggs and sperm to help a couple have a baby.

Doctors mix a woman's eggs and a man's sperm together in a lab. They then put them directly into the woman's [fallopian tube](#).

The first stages of this treatment are the same as for [IVF](#) (in vitro fertilisation).

- The woman has hormone injections to encourage egg production and doctors carefully check on her eggs using [ultrasound](#).
- Once the eggs are mature, doctors collect them. They do this by making a small cut in the woman's abdomen and passing a narrow tube down into the ovary to suck out the eggs.
- The man masturbates to produce a sperm sample, which is treated to get the best sperm.
- Sperm and eggs are then mixed in the lab
- Doctors then put the egg and sperm mix into one of the woman's fallopian tubes. They do this during the same operation where they collect the eggs. The sperm fertilises the egg naturally in the woman's fallopian tube rather than in the laboratory, as happens in IVF.

Some couples like the idea of having GIFT because they feel it is more natural than IVF. But it's more complicated. And the woman has to have a [general anaesthetic](#).

To have GIFT, the woman needs at least one tube that is open and working properly.

Fertility problems

How can it help?

If you have unexplained infertility, GIFT may improve your chances of getting pregnant. ^[157] But it's not certain. More research is needed.

In other research, GIFT worked no better than trying to get pregnant naturally or injecting sperm into the woman's womb. ^[158] ^[159]

How does it work?

When a woman gets pregnant naturally, one of her eggs is fertilised as it travels down her fallopian tube by a man's sperm. The fallopian tubes carry eggs from the ovaries to the womb.

See [Getting pregnant: the woman's role](#) to read more about what usually happens.

If you have unexplained infertility, it could be that one or more of these stages aren't working. So by mixing sperm with eggs in a laboratory and putting them directly into the fallopian tube, these problems could be avoided.

But doctors can't tell if the egg has been fertilised, as they can with IVF.

Can it be harmful?

About 1 in 20 women who have GIFT have an **ectopic pregnancy**. This is where the fertilised egg embeds and starts to grow in the fallopian tube instead of the womb. The risk of this happening is higher with GIFT than with IVF. ^[160] An ectopic pregnancy can be dangerous for the woman if doctors do not diagnose it early. Ectopic pregnancies have to be ended medically, for the health of the woman. Women who have GIFT also have a small risk of complications from having a general anaesthetic and from the operation.

The other side effects of GIFT are similar to the side effects of standard IVF. See [IVF for unexplained infertility](#) to read more.

Most of the side effects happen because of the extra **hormones** that a woman takes before GIFT to help her make extra eggs. Some common symptoms include:

- Feeling swollen or puffy
- Putting on weight
- Feeling bloated
- Having mild nausea.

These symptoms normally last only a week and you may feel better if you drink more fluid.

Fertility problems

You may also have more serious side effects such as:

- Vomiting
- Pain in your abdomen
- Feeling out of breath.

If you have these symptoms, your doctor may advise you to rest and drink more fluid.

Rarely, women have serious problems that can affect their heart and circulation, lungs, liver, or kidneys. If this happens, you may need to go to hospital. ^[54]

How good is the research on GIFT for unexplained infertility?

We found three high-quality studies (called randomised controlled trials) that compared GIFT (gamete intrafallopian transfer) with other treatments. ^[159] ^[158] ^[157] The studies included a total of 283 couples with unexplained infertility. Unexplained infertility means that doctors don't know why you can't get pregnant.

In two of the studies, GIFT worked no better than other treatments like having sex when the woman was ovulating, [putting sperm directly in the womb \(insemination\)](#) and [hormone injections](#). But in one study GIFT worked better. It's hard to know whether this finding was down to chance, as the study was quite small.

Clomifene for unexplained infertility

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 clomifene for unexplained infertility?](#)

This information is for couples who have unexplained infertility. It tells you about clomifene, a treatment used for unexplained infertility. It is based on the best and most up-to-date research.

Does it work?

Clomifene won't help you get pregnant if you have unexplained infertility. Unexplained infertility means that doctors don't know why you haven't been able to get pregnant.

What is it?

Clomifene (sometimes spelled clomiphene) is a tablet that you take for five days, early in your monthly cycle. Its brand name is Clomid. The standard dose is 50 milligrams (mg) or 100 milligrams each day.

Fertility problems

Clomifene encourages your ovaries to release eggs. It does this by changing the way oestrogen affects your body. This has the knock-on effect of increasing the levels of hormones that encourage ovulation.

How can it help?

One study, which looked at 580 women, found that taking clomifene didn't help women who had unexplained infertility.^[161] About 14 in 100 women gave birth after taking clomifene, compared with 17 in 100 women who didn't take it.

How does it work?

When you take clomifene, your body makes more of the hormones that help you get pregnant. Some of these hormones help the young eggs in your ovaries to grow. And they help an egg move out of one of your ovaries towards your womb. Sometimes more than one egg is released.

To read more about ovulation, see [Getting pregnant: the woman's role](#) .

But we don't know if this is any help for women with unexplained infertility.

Can it be harmful?

Clomifene has some side effects but they aren't serious and do not need treatment. Most of the side effects happen because of the extra hormones that your body makes when you take clomifene.

Side effects include:^[162]

- Feeling bloated, puffy, or uncomfortable
- Having hot flushes
- Putting on weight.

Having twins or triplets

If you take clomifene and you get pregnant, you're more likely to have twins or triplets than women who don't take clomifene. You may even have four or more babies, although this is less common. This happens because clomifene can make your ovaries release more than one egg at a time.

- Less than 10 in 100 women who get pregnant with clomifene have a multiple pregnancy, usually twins.^[28]
- This compares with an average of 1 in 100 or 2 in 100 women in the UK.^[163]

Fertility problems

Some couples might welcome having more than one baby, rather than seeing it as a problem. But if you have three, four or more babies, there is a high risk of premature birth and the babies dying.

Cancer of the ovaries or womb

In one study, women who took clomifene were more likely to get cancer in their ovaries.

^[31] But about half these cancers were 'borderline', which means they grow very slowly and may never cause problems. Other researchers found no overall increase in cancer of the ovaries after treatment with clomifene, but they found that the women who did get ovarian cancer were more likely to have a serious tumour. ^[32]

Another study found that clomifene increased the risk of cancer of the womb, but found no increased risk of cancer of the ovaries. ^[33]

And in four other studies, clomifene didn't increase the chance of getting cancer. ^[34] ^[35] ^[36] ^[37]

So, overall, we can't say whether or not clomifene causes cancer.

How good is the research on clomifene for unexplained infertility?

We found one big summary of the research (called a **systematic review**). It included five studies called **randomised controlled trials**. The women in the studies had **unexplained infertility**. If you have unexplained infertility, it means doctors don't know why you haven't been able to get pregnant.

- Women who took clomifene were no more likely to get pregnant than women who didn't take clomifene. ^[164]
- However, the studies were of mixed quality and some of the women were having other treatments or had tried other treatments in the past. And some hadn't been trying to get pregnant for very long.

So it's difficult to be sure whether clomifene has a real effect or not.

Further informations:

Infertility counselling

You might benefit from counselling if your problems with fertility mean that you: ^[2]

- Lose interest in your usual activities
- Feel down for long periods

Fertility problems

- Have strained relationships with your partner, family, friends or colleagues
- Have difficulty thinking of anything apart from your infertility
- Feel anxious a lot of the time
- Feel less able to accomplish things
- Have difficulty concentrating
- Notice a change in your sleep pattern (such as difficulty falling asleep, difficulty staying asleep, waking early, sleeping more than usual)
- Notice a change in your appetite or weight
- Think about using drugs or alcohol
- Think about suicide
- Feel lonely or distant from friends
- Have feelings of guilt or worthlessness that won't go away
- Have feelings of anger or bitterness that won't go away.

If you think you might be depressed because of your infertility, see [Depression in adults](#)

.

There are also certain times during your treatment when it may help to talk to a counsellor. You might find it helpful to see a counsellor if you are:

- Deciding whether to carry on with treatment
- Deciding between different treatments
- Thinking about stopping treatment or thinking about other ways of having a family, such as adoption
- Considering using [donor eggs](#) or [donor sperm](#) or finding a [surrogate mother](#) to have your child for you
- Having problems agreeing on treatment with your partner.

A counsellor may be able to:

Fertility problems

- Help you learn to cope with infertility
- Help you to come to terms with your feelings
- Help you make decisions about treatment.

A counsellor will usually advise that you and your partner seek help together.

How infertility can make you feel

Being unable to have a baby when you want to can be upsetting for you and your partner.

- You may feel disappointed, depressed and as if you're a failure.
- It won't help if people you know seem to be getting pregnant without any trouble at all.
- Parents who say they "long to be a grandparent" may make you feel worse.
- Friends may not know what to say, especially if they have all the children they want.
- Advances in medical treatments can help. But if they don't work they can make you feel even worse.

The strains of treatment

Treatments can be a strain, especially for the woman. The strain may be caused by:

- Repeated visits to the clinic
- Having to have sex at the right time
- Waiting for pregnancy test results
- Financial issues.

Women may feel: ^[2]

- Embarrassed and inadequate
- Humiliated
- Powerless

Fertility problems

- As if nothing in life has meaning other than having a child.

The strain on your relationship

Not being able to have a baby can come between you and your partner. Men often cope by keeping their unhappiness to themselves while women may want to talk about it. You may feel upset or betrayed by the way your partner deals with the problem. ^[3]

Sometimes one partner feels frustrated or angry with the other's seeming lack of interest. You may feel bad not only about your infertility, but also because you no longer feel so close to your partner.

You might also feel depressed because of your infertility. To read more about this see [Depression in adults](#) .

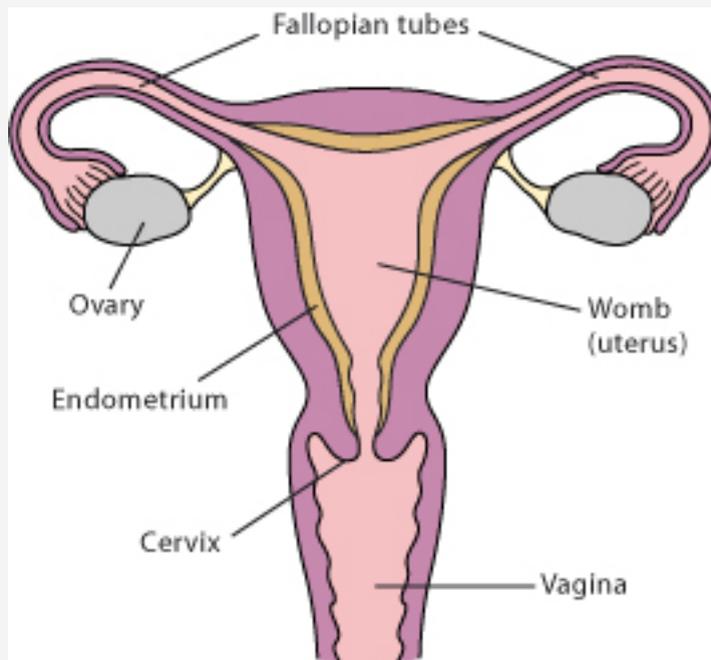
You can get help

It might help to talk about these feelings with a specially trained infertility counsellor.

See [infertility counselling](#) to find out more.

Getting pregnant: the woman's role

The diagram below shows the parts of your body that help you get pregnant. ^[10]



Eggs released by the ovaries travel down the fallopian tubes and grow in the womb.

Fertility problems

- Your ovaries make your eggs. Inside your ovaries are millions of pre-eggs, called follicles. These were formed before you were even born, but only some will become full-grown eggs.
- Your fallopian tubes carry full-grown eggs from the 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 an ovary. This is called ovulation. This normally happens every month as part of your menstrual cycle.

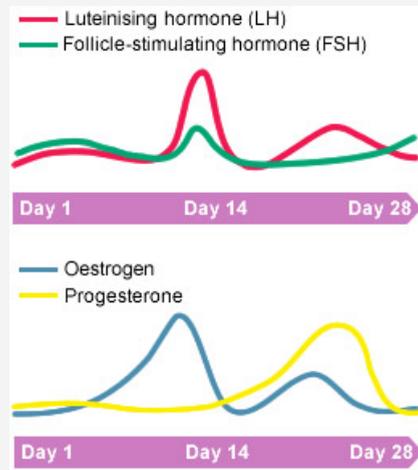
Your menstrual cycle begins during puberty. Each cycle lasts about 28 days, but they can be shorter or longer. They are controlled by your hormones. Certain hormones tell your ovaries to release an egg and help your body prepare for pregnancy.

To read more about what happens during your menstrual cycle, see [What happens every month](#).

What happens every month

Your menstrual cycle lasts about 28 days but it can be shorter or longer. It's controlled by certain hormones. The cycle has three stages. Each stage is important for getting pregnant. ^[10]

Fertility problems



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

Early cycle

- Your cycle begins on the first day of your period. At this time, you have low levels of hormones.
- In the first few days, part of your brain starts making a hormone called **gonadotropin-releasing hormone (GnRH)**.
- GnRH tells another part of the brain to produce two more hormones. They're called **luteinising hormone (LH)** and **follicle-stimulating hormone (FSH)**.
- LH and FSH travel in your bloodstream to your ovaries. Here, the hormones tell some eggs to start growing.
- The growing eggs make two more hormones called **oestrogen** and **progesterone**.
- One egg grows faster than the others. This egg keeps growing and the others shrivel up. This tends to happen in alternate ovaries each month.

Mid cycle

- In the middle of your menstrual cycle, there's a big increase in the amount of **luteinising hormone (LH)** in your body.
- This helps the growing egg move out of your ovary into your fallopian tube. This is called **ovulation**.
- Tiny hairs in the tube push the egg along the tube, towards your womb.

Fertility problems

Late cycle

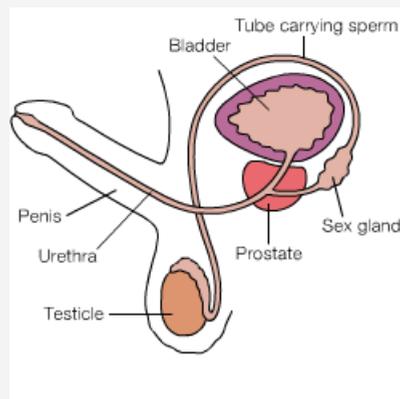
- At the end of your cycle, your body prepares for pregnancy.
- Your ovary starts to make large amounts of a hormone called **progesterone**.
- This hormone makes the lining of your womb thicker, ready for a fertilised egg to arrive. If an egg arrives, it joins to the lining of your womb. This lining is called the endometrium.

After your cycle

Two things can happen at the end of your cycle:

- You get pregnant. The levels of hormones in your body stay high to continue your pregnancy.
- You don't get pregnant. Hormone levels start to drop. Without hormones the lining of your womb begins to break down and fall toward your vagina. This is when you have your period. When your period has finished, hormone levels start to rise and the cycle starts again.

Getting pregnant: the man's role



This diagram shows the parts of the man's body involved in making sperm. ^[11]

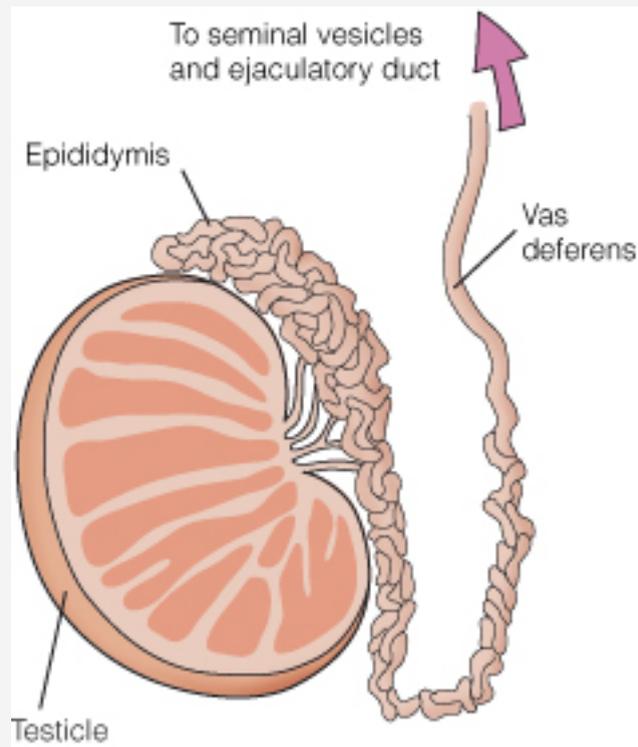
- Your testicles make sperm. They sit under your penis in a bag called the scrotum.
- A series of narrow tubes take the sperm from your testicles towards your penis.

Fertility problems

- Two sex glands and your prostate add fluid to your sperm as they pass through the tubes. It gives sperm energy and helps them to swim. The mixture of sperm and fluid is called semen.
- When you ejaculate , your penis pushes out the semen.
- Your urethra is a tube that carries both urine and semen out through your penis.

See [More about sperm](#) .

Your testicles



Sperm grow and are stored in coiled tubes.

Your testicles make sperm and sex hormones.

Testicles make up to 120 million sperm each day. These become full-grown in about 10 weeks to 12 weeks.

Your testicles lie inside a pouch of skin called the scrotum. This hangs down outside your body because sperm grow best when the temperature is a few degrees lower than your body temperature .

When a male baby is growing in the womb, its testicles are inside its body. But as the baby grows, the testicles move downward. When the baby is born, the testicles are normally outside the body, in the scrotum. In some boys, the testicles stay inside the

Fertility problems

body. This can cause problems later, as a testicle left inside can't grow normally and can't make sperm.

Joined to each testicle is a tightly coiled tube (called the epididymis). Sperm are stored here once they have grown.

What happens when you ejaculate?

When you are sexually excited, the tubes in your testicles get narrower and squeeze sperm out. The sperm travel through a series of tubes toward your penis. The sex glands and the prostate add fluid to the sperm to make semen. The semen is pushed out of your penis through the urethra.

When you ejaculate, you normally release between 1.5 millimetres and 5 millilitres of semen. That's about one teaspoonful or less.

Because your urethra carries both semen and urine out of the body, the neck of the bladder (the sac that holds urine) normally closes during ejaculation. This prevents semen from going into the bladder and it also stops urine from getting into semen.

More about sperm

Sperm are tiny. You can only see them using a microscope. Fully-grown sperm are shaped like tadpoles, with a head, a neck and a tail.

In the head of the sperm is a copy of all the man's genes, which he will pass on to any children. Also in the head are chemicals that help the sperm fertilise an egg.

The neck of the sperm bends and allows the head to move from side to side as part of the swimming movement.

The tail flicks back and forth so that the sperm can 'swim'.

Most sperm can live for about three days inside the woman, though a few may live longer.
^[12]

Unexplained infertility

In some couples, there seems to be nothing wrong. Tests show that everything seems normal. Yet they still can't get pregnant. This is called **unexplained infertility** and it affects about one quarter of infertile couples.
^[13]

Doctors now think that unexplained infertility is probably caused by a small problem in each partner. On their own the problems wouldn't matter. But if both partners have something slightly wrong it affects the chance of getting pregnant.

Fertility problems

For example, a man may have a few sperm that do not move properly. And a woman's eggs may have slight abnormalities that make it hard for them to be fertilised. Or she may have slightly damaged tubes that make it difficult for eggs to pass down them.

If you have unexplained infertility, doctors may not try to find out the exact cause. It isn't worth looking for a cause because the treatments are the same anyway. And more detailed tests instead of treatments may waste valuable time.

Problems ovulating

If you can't get pregnant because you have problems ovulating, it means that your ovaries are either not releasing eggs at all or not releasing them regularly. If you don't ovulate each month, then you may not have an egg available to be fertilised by sperm.

This problem is very common. About one-third of women who can't get pregnant have problems ovulating. ^[13]

Polycystic ovary syndrome

The most common reason that women don't ovulate is a condition called polycystic ovary syndrome (PCOS for short). PCOS is caused by an imbalance of hormones. It means that eggs grow in the ovaries, but are not released into the fallopian tubes.

If you have PCOS, you may also get acne and grow unwanted hair on your face and body. Your periods are likely to be irregular, if you get them at all. ^[14]

PCOS is more common in women who are overweight. To find out more, see our articles on [Polycystic ovary syndrome](#) .

Early menopause

The menopause is when your ovaries stop releasing eggs. It happens to all women, normally between the ages of 45 and 55. But it can happen earlier in some women. If you have menopause before the age of 40, doctors call it **early menopause**.

An early menopause can be caused by: ^[14]

- Surgery on your ovaries
- Treatment for cancer
- Your genes

Fertility problems

Early menopause can run in families. If your mother had an early menopause, you may have one too. ^[14]

Low hormone levels

A small number of women make too little or none of the two hormones that make ovulation happen. When this happens it is called hypogonadotropic hypogonadism. The hormones involved are called **luteinising hormone** (LH) and **follicle-stimulating hormone** (FSH).

This can happen if you lose a lot of weight or if you have a condition called **anorexia**.

See [What happens every month](#) to learn more about these hormones.

Blocked or damaged fallopian tubes

About 15 percent of women who haven't been able to get pregnant have damaged or blocked **fallopian tubes**. ^[13] These are the tubes that connect your ovaries to your womb.

Eggs are released from the ovaries and travel down the fallopian tubes towards the womb. If your tubes are damaged or blocked, eggs won't be able to reach the womb.

The most common reason why tubes get damaged or blocked is a condition called **pelvic inflammatory disease** (PID). This is an infection that can affect the womb, ovaries or tubes. It's very common. This infection can block or damage the fallopian tubes, so that eggs may not be able to pass down the tubes and the sperm may not be able to travel up them.

See [Pelvic inflammatory disease](#) to find out more about this condition.

Sometimes the damaged tubes swell and fill with fluid. The fluid can drain into the womb. Doctors think that if a woman with damaged tubes has [in vitro fertilisation](#) (IVF) to help her get pregnant, this fluid can make it difficult for the fertilised egg to grow into the lining of the womb. So it may help to have the damaged tubes taken out before having IVF.

See [Surgery for women with blocked or damaged tubes](#) to read more.

Pelvic inflammatory disease

Pelvic inflammatory disease (or PID for short) is a common infection that women can get.

Fertility problems

Key points about pelvic inflammatory disease

- About 1 in 7 women get pelvic inflammatory disease.
- It can affect the womb, the tubes (fallopian tubes) that lead from the ovaries to the womb or the ovaries .
- It happens after a sexually transmitted infection (such as chlamydia).
- It's serious. The more often you get pelvic inflammatory disease, the greater your chances of being infertile.
- It can also cause an ectopic pregnancy . If the fertilised egg can't get down the fallopian tube, it starts growing in the tube instead of in the womb.
- You can reduce your chances of getting pelvic inflammatory disease by using a barrier method of contraception, such as condoms or a cap (diaphragm) and spermicidal cream.

NHS guidelines recommend that all women should be tested (screened) for chlamydia before having investigations to see if the fallopian tubes are blocked. ^[15]

Symptoms of pelvic inflammatory disease

- Discharge from the vagina
- Pain when you urinate
- Pain in your abdomen
- Fever and chills
- Nausea.

If you have any of these symptoms, or if you've had them in the past, you should see your doctor. Pelvic inflammatory disease can be treated with antibiotics . Antibiotics can kill the bacteria that caused the infection, but they can't undo any damage that's already been done to your fallopian tubes.

Sometimes this condition doesn't have any symptoms, so you may not know that you have it. ^[15] To find out more, see our articles on [Pelvic inflammatory disease](#) .

Endometriosis

About 1 in 20 women who can't get pregnant have a condition called endometriosis. ^[13] This is a disease of the lining of the womb. The lining is called the **endometrium**.

If you have endometriosis, the cells that normally grow in the endometrium are growing in other places outside the womb. They might grow around the ovaries and fallopian tubes, or the bowel. The endometrial tissue outside the womb usually bleeds at the same time as the woman has her period. This is painful and can scar and damage these organs.

Doctors aren't sure why endometriosis lowers the chances of a woman getting pregnant. It may affect the quality of the egg, damage the sperm, cause scarring, or make it more difficult for the sperm to fertilise the egg. Although endometriosis is painful, it's often not diagnosed until a woman has difficulty becoming pregnant.

If you want to find out more, see our articles on [Endometriosis](#) .

Fibroids

Fibroids are large growths some women have in their womb. They are not dangerous to the woman's health and they're not the same as cancer. But fibroids may sometimes stop a fertilised egg growing in the womb.

Doctors don't know why fibroids happen. They may be caused by changes in levels of [hormones](#) .

To find out more, read our articles on [Fibroids](#) .

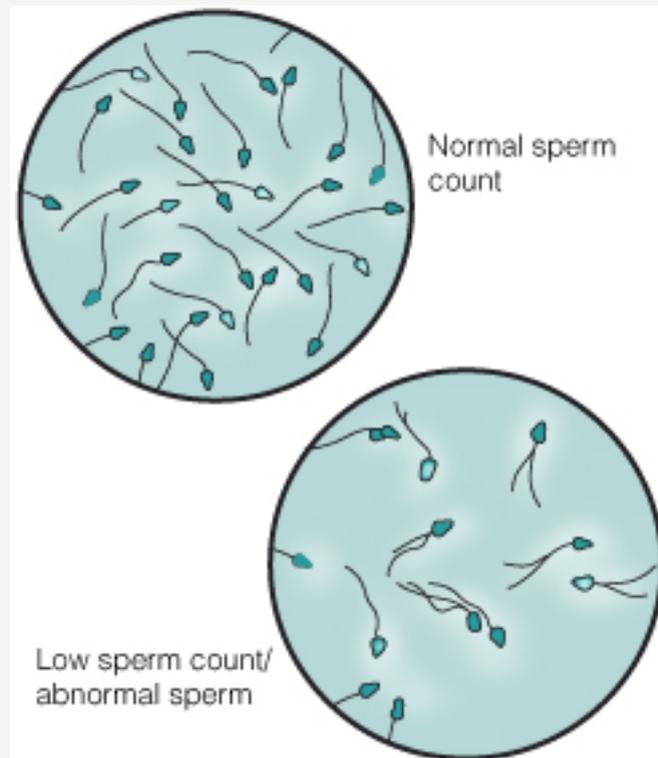
Problems with sperm

Most men with fertility problems have one or all of these problems:

- Too few sperm (low sperm count)
- Abnormally shaped sperm
- Sperm that don't swim well.

Fertility problems

Low sperm count



If a man is infertile, it may be because he makes too few sperm. Or the sperm may be abnormal.

A normal sperm sample should contain at least 40 million sperm, or at least 20 million sperm per millilitre (ml for short). Half of these should be moving. ^[16]

If you have fewer sperm than this, you have a **low sperm count**. This doesn't mean that you and your partner can't get pregnant, but it may take longer.

Doctors define **borderline sperm quality** as between 10 million and 20 million sperm per millilitre of semen, 30 percent to 50 percent of sperm moving and 4 in 100 to 14 in 100 sperm with normal appearance. ^[17]

Doctors define **very poor sperm quality** as less than 10 million sperm per millilitre of semen, less than 30 percent of sperm moving and less than 4 in 100 sperm with normal appearance. ^[17]

Some men have a **very low sperm count** or no sperm at all. ^[18] A low sperm count may be caused by an imbalance of hormones, previous damage to the testicles, or an infection of the testicles. A low sperm count sometimes runs in families. Sometimes doctors don't know the reason.

Fertility problems

Abnormal sperm

Sperm may be abnormally shaped. This may stop them moving normally or fertilising an egg. We don't know why this happens.

For more information, see [More about sperm](#) .

Problems getting sperm to the right place

Some men make sperm, but can't get them into their partner's vagina. This may be because:

- They can't get an erection. To find out more about this and how it's treated, see [Erection problems](#) .
- They can't release sperm from their penis ([ejaculate](#)).
- There is a blockage in the tubes between their testicles and their penis. This can happen for several reasons, such as a sterilisation operation (vasectomy) or an infection.
- Semen is going backwards into the bladder instead of towards the penis. This is called **retrograde ejaculation**. It happens if the valves at the opening of the bladder do not close properly when a man is having sex. It can be caused by damage to the nerves. Nerve damage may be caused by [diabetes](#) or by surgery in this area.

Sperm antibodies

A few men produce [antibodies](#) that destroy or damage their own sperm, usually as a result of damage to the testicles or infection.^[19] Doctors now think this is less important as a cause of infertility than they used to.

Fertility treatment and your weight

If you are a woman and very overweight, your doctor may advise you to lose weight before having fertility treatment. Doctors have been told to delay offering in vitro fertilisation (IVF) treatment to women who are very overweight (obese), until they can get down to a healthy weight.^[23]

This may sound very unfair. But there are good reasons why it may be best to try to lose weight before having fertility treatment:^[23]

Fertility problems

- Some fertility problems are caused by being overweight. Being very overweight can disrupt your hormones, so you don't release eggs (ovulate). If you lose weight, you may find you can get pregnant naturally, without having treatment.
- Fertility treatments like IVF put quite a lot of strain on the body. Some treatments can be harder to do if a woman is very overweight. Your doctor may think the treatment is too much of a risk for your health, if you are very overweight.
- Fertility treatments like IVF work better if you are at a healthy weight. Being at a healthy weight means you are more likely to get pregnant with fertility treatment.
- Being overweight means you are more likely to have problems in your pregnancy, such as miscarriage, high blood pressure, problems with labour, and diabetes. Babies are also at more risk of birth defects if their mothers are very overweight.

Doctors measure people's weight using body mass index. This is a single number that says whether you are a healthy weight for your height. A BMI of 18.5 to 25 indicates a normal, healthy weight. A BMI of 25 to 30 shows you are overweight. If your BMI is 30 or over, doctors will say you are obese. You can work out your BMI [here](#) .

Guidelines say that women under the age of 37 should have their treatment delayed until their BMI is less than 30. Women over the age of 37 should have treatment delayed until their BMI is less than 35. ^[23]

Your doctor should offer you help and support to get your weight down to a healthy level. And men need to watch their weight too. Men and women who have a BMI over 30 are likely to take longer to get pregnant. For more about what works best, read our information on [Obesity](#) .

Fertility tests: the first round

Tests for women

Blood test

Measuring levels of progesterone during the second half of the [menstrual cycle](#) will show whether you've ovulated. ^[24] This is because your progesterone levels rise after ovulation. You'll probably have a blood test seven days before the expected date of your period: day 21 in a 28-day cycle or day 28 in a 35-day cycle. It's important to get the timing right. If it's done at the wrong time, progesterone levels will be low anyway.

Fertility problems

Tests for men

Semen test

You'll be asked to provide a sample of your semen in a cup. You can do this by masturbating at home, but your sample will need to reach the laboratory for testing very quickly, preferably within an hour of you producing it. Or you may be asked to provide the sample at the hospital.

Your semen will be examined under the microscope to check the number, shape, and movement of sperm in the sample. It will also be tested for any signs of infection.

Other tests

If you have [erection problems](#) or [ejaculation problems](#), you'll normally be referred to a specialist doctor called a urologist for further tests.

Further fertility tests

There are several further tests that doctors can use to find out more about your infertility. It's important to discuss the advantages and disadvantages of any medical procedure with your doctor.

Chlamydia test

Before having any test that involves looking in your womb, your urine or cervical mucus should be checked for chlamydia infection. ^[24] This is a common cause of [pelvic inflammatory disease](#). If you have the infection then you and your partner will need antibiotic treatment to get rid of it. This will reduce the chance of the infection spreading into your womb during your other tests.

Hysterosalpingography

This is an x-ray test that shows the inside of a woman's womb and fallopian tubes (the tubes that run from the ovaries to the womb). It can check for blockages or growths.

NHS guidelines say that this test should be offered to women who may have blocked tubes but who have no signs of other problems, such as [pelvic inflammatory disease](#), a previous [ectopic pregnancy](#), or [endometriosis](#). ^[24]

You should not have a hysterosalpingogram if:

- You may be pregnant
- You have abnormal bleeding or your last period was not normal. (This may mean you are pregnant)

Fertility problems

- You have a pelvic infection
- You are taking a drug called metformin. (You must stop taking it before you have a hysterosalpingogram.)

The test is carried out during the first half of your [menstrual cycle](#) . It can be painful so your doctor may advise you to take painkillers one hour before. Here's what happens:

- The doctor puts a small tube through the neck ([cervix](#)) of your womb and injects a small amount of special fluid into your womb
- The fluid will make your womb and possibly your fallopian tubes stretch
- An x-ray machine is passed over your abdomen and takes pictures as the fluid fills your womb
- If your tubes aren't blocked, the fluid will spill out of the far ends of your tubes, near your ovaries
- If your tubes are blocked, the x-rays will show that the fluid is stuck inside and can't pass through to the other end
- After the test, the fluid is absorbed or drains out of your vagina.

You may feel a little sick or dizzy or have stomach cramps for a day or two after the test.

Doctors normally use a water-based fluid for this kind of investigation. But recent research has found that if doctors use an oil-based fluid to flush your tubes, it can increase your chance of getting pregnant and having a baby (as well as show up any blockages). ^[25] It's worth asking your doctor about this.

Hysterosalpingo-contrast sonography (HyCoSy)

This is a relatively new test. The doctor puts an [ultrasound probe](#) into your vagina. Sound waves (instead of x-rays) show whether the fallopian tubes are blocked.

As with hysterosalpingography, doctors inject a special fluid into your womb and look at the passage of the fluid through the tubes. And this flushing of your tubes may increase your chance of getting pregnant. ^[25] But unlike hysterosalpingography, doctors can't see if there are other problems with the tubes.

Transvaginal ultrasound

This also uses sound waves, this time to get pictures of the ovaries, fallopian tubes, and womb.

Fertility problems

Doctors put a small probe into your vagina to get the pictures and sometimes add a dye to get clearer images. Doctors may use this method to do a HyCoSy (see above) and also to watch the growth of eggs (follicles) in the ovaries. This is called follicle tracking.

Hysteroscopy

Doctors sometimes use this test to diagnose or treat problems in or near the womb. You can have a local anaesthetic or a general anaesthetic for this test.

Here's what happens:

- Your doctor puts a thin, telescope-like device (called a hysteroscope) into your womb, through the vagina and cervix
- The doctor can then look through the tube into the womb to check for [fibroids](#) or other reasons why an egg that has been fertilised might not be able to grow in the womb
- If necessary, your doctor can also take a small sample of tissue to examine in the laboratory
- Sometimes, doctors take samples from a fibroid or other growths using the hysteroscope.

Laparoscopy

If your specialist thinks you may have problems with your ovaries or womb, he or she may want to get a better look at your ovaries, tubes and womb using a laparoscope. ^[24] This is a flexible tube with a special camera at one end. You'll probably need to have a general anaesthetic for this.

Here's what happens:

- Your doctor makes a small cut at the lower edge of your navel
- The tube goes through this hole
- Looking through the tube, the doctor can check for problems such as [endometriosis](#), [blocked or damaged tubes](#), [cysts on your ovaries](#) or [fibroids](#) in your womb
- Your doctor can take a sample of tissue and may be able to remove growths or repair some damage.

A laparoscopy can provide more information than hysterosalpingography or hysteroscopy. But it is a more serious procedure with a small risk of bleeding or damage to other parts of your body. It may take you longer to recover from this than other tests.

More about IVF

A cycle of IVF (in vitro fertilisation) treatment has several stages.

In the first stage of IVF, a woman is given hormone treatments to help her make eggs. This is usually given as a nasal spray, followed by injections. The hormones make the ovaries produce as many as 20 eggs instead of only one. This gives a woman a greater chance that at least one egg will be fertilised.

To read about hormone injections before in vitro fertilisation, see [Hormone treatments to help make eggs before IVF or GIFT](#) .

- Doctors use ultrasound scans to check how the eggs are growing. And doctors also check that the lining of the womb is getting thicker in preparation for pregnancy.
- When there are enough mature eggs in the ovaries, doctors carefully remove the eggs. They do this by passing a fine needle up through the wall of the vagina. The needle pierces the wall of the ovary and the eggs are sucked out. You may need painkillers or a sedative when this is happening. Some clinics offer a general anaesthetic .
- After the eggs are removed, the woman starts further hormone treatments to help the lining of her womb prepare for pregnancy.
- In the lab, scientists mix the eggs with sperm they have taken from the woman's partner. Sperm and eggs are put in a dish of special fluid to encourage fertilisation. This is where the sperm fuses with the egg. The fertilised egg is called the embryo.
- Two days to five days after the eggs are taken out, doctors put one or two healthy embryos back into the woman's womb. ^[38] Doctors used to put three embryos into the womb but this led to many women having triplets. Doctors put the embryos back into the woman's womb using a fine tube that is put up the vagina and through the cervix . You don't need a general anaesthetic for this.

Recently, doctors have been looking at whether a 'mild' form of IVF might work as well as normal IVF, but cause fewer side effects. In this type of IVF, you have a lower dose of hormone treatments, and just one embryo put into your womb.

A study showed it worked about as well as regular IVF, in terms of how many women had successful pregnancies. It didn't make much difference to side effects, but it did mean women avoided multiple pregnancies. ^[39]

A similar form of treatment, called natural cycle IVF, means the woman does not take hormones, but the doctors harvest naturally-produced eggs. This may work as well as regular IVF, but we need to see more research to be sure. ^[40]

Fertility problems

Some people think that a woman's chances of getting pregnant might be improved by taking antibiotics before embryos are put into her womb or by taking aspirin while having IVF. But a review of evidence found no increase in the number of pregnancies in women that took antibiotics compared to those who did not. ^[41] And another review found no increase in the number of pregnancies in women that took aspirin compared to those who did not. ^[41] More research is needed before doctors know for certain whether treatment with antibiotics or aspirin helps improve chances of pregnancy.

You may need to decide whether to go to a private fertility clinic for IVF or to see what is available on the NHS.

Guidelines for doctors say that women aged under 40 who have not got pregnant after two years of trying (or 12 cycles of artificial insemination) should be offered three full cycles of IVF on the NHS.

Women aged 40 to 42 should be offered one full cycle if they have not had IVF before, there is no reason to think they have too few eggs left, and they have discussed with the doctor the additional risks of IVF and pregnancy for women over 40. ^[7]

Women who are very overweight may be asked to lose weight before starting treatment. To find out more, see [Fertility treatment and your weight](#) .

How many embryos?

Doctors used to put three or more embryos into the woman's womb during IVF. But this meant more multiple pregnancies, which can be harmful.

Doctors take account of things like your age, your attitude to having more than one baby at once, and how successful they think the IVF is likely to be. Younger women, and women with embryos that look very healthy, may be advised just to have one embryo put into their womb each cycle.

Guidelines for doctors say: ^[7]

- For women aged under 37, one embryo should be transferred in the first IVF cycle, and in the second cycle if good quality embryos are available. No more than two embryos should be transferred.
- For women aged 37 to 39, two embryos can be transferred in each cycle if there are no good quality embryos available.
- For women aged 40 to 42, two embryos can be transferred in each cycle.

No more than two embryos should be transferred at any one time. If two embryos are used, doctors should discuss with you first the risk of having twins.

Hormone treatments to help make eggs before IVF or GIFT

If you're having IVF (in vitro fertilisation) or GIFT (gamete intrafallopian transfer), you are given hormones to increase the number of eggs your ovaries make. The hormones you're treated with are very similar to the hormones that your body makes normally. There are three main groups of hormones used for fertility treatment.

Gonadotropins. These come as injections and they increase the number of eggs your ovaries make. Some gonadotropins (and their brand names) are:

- follitropin alfa (Gonal-F, Puregon)
- menotrophin (Menopur)
- chorionic gonadotropin (Choragon, Pregnyl).

GnRH agonists (short for gonadotropin-releasing hormone agonists). These come as injections or sprays. They are used before treatment with gonadotropins to stop you ovulating. Some GnRH agonists are:

- goserelin (Zoladex)
- nafarelin (Synarel)
- buserelin (Suprecur).

GnRH antagonists. These injections are given after treatment with gonadotropins to stop you ovulating. Some GnRH antagonists are:

- ganirelix (Orgalutran)
- cetorelix (Cetrotide).

You may have the following combinations of hormone treatments when you have IVF or GIFT:

- Gonadotropins
- GnRH agonists plus gonadotropins
- Gonadotropins plus GnRH antagonists.

Another option is called **priming**. This has been used in women with [polycystic ovary syndrome](#) (PCOS), who may be very sensitive to hormone injections. In this case doctors do IVF by taking out young eggs from the ovary and fertilising them in the laboratory by

Fertility problems

injecting sperm straight into the egg (a procedure called intracytoplasmic sperm injection or ICSI for short). Before taking out the young eggs, the woman will have some hormone injections. ^[42] ^[43] ^[44]

Taking a GnRH agonist before IVF may work better than taking a GnRH antagonist. ^[45]
If you take a GnRH antagonist, your chance of pregnancy may be about one-fifth less.

It's not clear what type and amount of hormones are best for priming. ^[42] ^[43] ^[44]

Are there any side effects?

One side effect is called ovarian hyperstimulation syndrome (OHSS). It happens to about 1 in 10 women who have hormone treatments. ^[46] One review of the evidence found that taking gonadotropins was more likely to cause OHSS than using other hormone treatments. ^[47]

OHSS can be mild or severe.

Symptoms of mild OHSS include:

- Feeling swollen or puffy
- Putting on weight
- Feeling bloated
- Feeling sick.

These symptoms normally last only a week and you may feel better if you drink more fluid.

You may also have more serious side effects such as:

- Vomiting
- Pain in your abdomen
- Feeling out of breath.

About 1 in 50 women who have IVF have serious problems that can affect their heart and circulation, lungs, liver, or kidneys. If this happens, you may need to go to hospital.

If you have [polycystic ovary syndrome](#) (PCOS), you have a higher chance of getting OHSS if you take a GnRH agonist together with gonadotropins, rather than gonadotropins alone. ^[48]

Types of hormone injection

If you have [problems ovulating](#) , you can have [hormone injections](#) to help you ovulate more regularly.

They contain one or more of these hormones :

- Follicle-stimulating hormone (FSH)
- Human chorionic gonadotropin (hCG)
- Luteinising hormone (LH).

These hormones occur naturally in the body and can be taken out of urine, or they can be made in a laboratory.

Here are the main types of hormone injections (and their brand names):

- Menotrophin (Menopur): Menotrophin is made from the urine of [menopausal](#) women. It contains FSH and LH.
- Urofollitropin (Fostimon): This is also made from urine but only contains FSH. This is because some women, especially those with [polycystic ovary syndrome](#) (PCOS), already make their own LH and just need FSH.
- Follitropin (Gonal-F, Puregon): This is FSH made in a laboratory.
- Lutropin (Luveris): This is just LH. It can be taken along with FSH if you have **hypogonadotropic hypogonadism**. (For more information, see [Low hormone levels](#) .)
- Human chorionic gonadotropins (hCG) (Pregnyl, Ovitrelle): You can have these injections when doctors work out that one of your eggs is ready to move out of one of your ovaries. Doctors use [ultrasound](#) to find the right day to give this type of injection. Human chorionic gonadotropin (hCG) is a hormone made by the [placenta](#) during pregnancy that works like LH in the body. It comes from the urine of pregnant women or it can be made in the laboratory.

To read about hormone injections before in vitro fertilisation, see [Hormone treatments to help make eggs before IVF or GIFT](#) .

More about surgery for blocked or damaged tubes

If you have surgery to treat [blocked or damaged tubes](#), you'll need a general anaesthetic

Different types of surgery

Open surgery

The surgeon makes a large cut in your abdomen and looks directly at your ovaries, tubes and womb.

Microsurgery

The surgeon makes a cut in your abdomen but uses a special microscope or magnifying binoculars. This means the hole is small and the surgeon can use more precise tools. So there's less chance of damage or scarring. Most surgeons use this technique.

Keyhole surgery

This is done with the help of a special camera called a laparoscope. The surgeon makes three or four small cuts in your abdomen. The laparoscope goes into one cut, and operating tools go through the other holes. The surgeon can see what he or she is doing on a large TV screen.

The advantage of keyhole surgery is that you'll probably be able to go home from hospital on the same day or the day after. And you'll feel better and get back to work or other normal activities more quickly.

How the tubes are repaired or unblocked

Surgeons can use different tools to unblock your tubes. They can use tiny scalpels, hot wires or lasers to cut away or destroy the damaged areas. Hot wires and lasers have the advantage that they seal the healthy tissue that is left behind. This means it is less likely to start bleeding.

- If the blockage is near your womb, your surgeon may remove part of the tube and sew the rest of the tube back together. If the blockage is near your ovaries, surgeons prefer to open up the end of the tube and remove the damaged parts.
- During surgery, surgeons may flush fluid through your tubes and womb. This gets rid of any loose pieces of tissue that have been left behind.
- Some surgeons like to do a follow-up operation with a laparoscope. This is to check that the first surgery didn't leave any scars. The surgeon may flush the area with fluid this time.

Fertility problems

More about surgery for endometriosis

If you have surgery for endometriosis, you'll need a general anaesthetic. This will put you to sleep during the operation. Sometimes surgeons do this operation at the same time as other tests.

There are two types of surgery: keyhole surgery and open surgery.

Keyhole surgery

The surgeon makes a small cut into your abdomen and uses a narrow tube with a special camera (called a laparoscope) to look for damage or scars around the ovaries, fallopian tubes and womb. To remove the endometriosis, the surgeon uses small operating tools through other small cuts in your abdomen.

It takes a few days to recover.

Open surgery

If your endometriosis is very bad, surgeons do open surgery rather than keyhole surgery. This is a more serious operation. It takes about six to eight weeks to recover.

The surgeon makes a large cut in your abdomen and looks directly at your ovaries, tubes and womb.

Glossary:

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.

ejaculation

When a man ejaculates, his penis suddenly releases semen, the white or transparent fluid that carries sperm.

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.

genes

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

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.

body temperature

Your body temperature is a measure of how warm you are. If you have a higher temperature than normal, it can mean that your body has an infection or you have a fever. Women also have a higher temperature at the time of month when their ovaries release an egg (ovulation).

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.

anorexia

Fertility problems

Anorexia is an eating disorder. People who have anorexia starve themselves because they think they are too fat. They do this even when they are very thin. It is most common among teenage girls. Doctors may call it anorexia nervosa.

sexually transmitted infection

An infection that is spread by people having sex is called a sexually transmitted infection (STI) or a sexually transmitted disease (STD). Examples are HIV, gonorrhoea and syphilis.

ectopic pregnancy

An ectopic pregnancy is when a fertilised egg lodges itself outside of the womb, usually in the fallopian tube. This can be a dangerous condition.

antibiotics

These medicines are used to help your immune system fight infection. There are a number of different types of antibiotics that work in different ways to get rid of bacteria, parasites, and other infectious agents. Antibiotics do not work against viruses.

diabetes

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

antibodies

Antibodies are an important part of your immune system. They are proteins made by white blood cells (another part of your immune system). They help destroy bacteria and other agents that cause infections.

bulimia

Bulimia is a psychological illness. People who have it tend to eat too much at one time (called bingeing) and then do something to keep from gaining weight. For example, they may make themselves sick or do too much exercise.

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.

cystic fibrosis

Cystic fibrosis is a disease people are born with that gives them problems with their lungs and bowels. The main results are breathing and digestive problems.

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.

chlamydia

Chlamydia is an infection you can get by having sex without a condom. It can cause pain or discomfort and discharge from your sexual organs. If you're a woman, it can also cause infertility or a painful infection inside your body.

gonorrhoea

Gonorrhoea is an infection you can get by having sex without a condom. If you're a man, it can cause pain in the tube (the urethra) inside your penis and give you a milky discharge from your penis. If you're a woman, it may not cause you any symptoms, but it can damage your tubes and ovaries, making you infertile.

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.

obesity

If your body stores more energy than you need, this can make you overweight. The excess energy is stored in your fat cells. If your weight goes above a certain level, doctors call this obesity. Obesity is considered a medical condition. The excess weight can be a strain on your bones and joints. And if you are obese, you're more likely to get other diseases. Doctors have developed a scale for telling how much excess weight you have. This measure, called the body mass index (BMI), depends on your height.

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).

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.

Fertility problems

ultrasound probe

Ultrasound is a technique doctors use to create images of the organs in your body. An ultrasound probe is a device that lets the ultrasound machine focus on an area of your body. The ultrasound machine can then send out high-frequency sound waves, which reflect off parts of your body to create a picture.

local anaesthetic

A local anaesthetic is a painkiller that's used to numb one part of your body. You usually get local anaesthetics as injections.

general anaesthetic

You may have a type of medicine called a general anaesthetic when you have surgery. It is given to make you unconscious so you don't feel pain when you have surgery.

systematic reviews

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

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.

ultrasound

Ultrasound is a tool doctors use to create images of the inside of your body. An ultrasound machine sends out high-frequency sound waves, which are directed at an area of your body. The waves reflect off parts of your body to create a picture. Ultrasound is often used to see a developing baby inside a woman's womb.

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.

kidney

Your kidneys are organs that filter your blood to make urine. You have two kidneys, on either side of your body. They are underneath your ribcage, near your back.

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.

insulin

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

menopause

When a woman stops having periods, it is called the menopause. This usually happens around the age of 50.

placenta

The placenta is an organ that grows in the womb during pregnancy. It joins the woman to the growing baby. The placenta provides the baby with oxygen, water and nutrients from the mother's blood. It also produces the hormones that are involved in pregnancy.

laser

A laser focuses light in a way that makes it able to cut through things. Surgeons sometimes use lasers when they need to do delicate operations.

case control studies

A case control study matches patients in the case group with a control group. Only the case group receives the treatment that's being looked at. Both groups are followed over time to see if there are any differences in their outcomes. Retrospective case control studies compare the exposures of patients who developed a certain disease (such as cancer) with those who did not. Case control studies are considered a weak form of evidence.

radiologist

Fertility problems

A radiologist is a doctor who specialises in using X-rays and other tools to see the inside of people's bodies.

observational studies

Observational studies examine how common a disease is or how risk factors affect the chances of getting a disease. There are three types of observational studies: cross-sectional studies, cohort studies and case-control studies.

cohort study

A cohort study follows a group of people (a cohort) and records the different things that happen to them. For example, a cohort study could find out whether lung cancer is more common in people in the cohort who smoke. Prospective cohort studies (which begin at a certain time and then look at what happens to the people in the study) are more reliable than retrospective cohort studies (which look at groups of people after events have happened to them).

cleft palate

Babies who are born with a cleft palate have a hole in the roof of their mouth. Surgeons usually correct the problem during the first year of a child's life.

HIV

HIV stands for human immunodeficiency virus. It's the virus that causes AIDS. It makes you ill by damaging cells called CD4 cells. Your body needs these cells to fight infections. You can get HIV by sharing needles for injecting drugs, or by having sex without a condom with someone who has the virus.

Sources for the information on this leaflet:

1. National Institute for Health and Care Excellence. Fertility: assessment and treatment for people with fertility problems. February 2013. Available at <http://guidance.nice.org.uk/CG156> (accessed on 27 October 2014).
2. Whiteford LM, Gonzalez L. Stigma: the hidden burden of infertility. *Social Science & Medicine*. 1995; 40: 27-36.
3. Mahlstedt PP. Psychological issues of infertility and assisted reproductive technology. *Urologic Clinics of North America*. 1994; 21: 557-566.
4. Cahill DJ, Wardle PG. Management of infertility. *BMJ*. 2002; 325: 28-32.
5. National Institute for Health and Care Excellence. Fertility: assessment and treatment for people with fertility problems. February 2013. Available at <http://guidance.nice.org.uk/CG156> (accessed on 27 October 2014).
6. Meniru GI. Fertilization, implantation and early development. In: *Cambridge guide to infertility management and assisted reproduction*. Cambridge University Press, Cambridge, UK; 2001.
7. National Institute for Health and Care Excellence. Fertility: assessment and treatment for people with fertility problems. February 2013. Available at <http://guidance.nice.org.uk/CG156> (accessed on 27 October 2014).
8. Meniru GI. Evaluation of the infertile couple. In: *Cambridge guide to infertility management and assisted reproduction*. Cambridge University Press, Cambridge, UK; 2001.
9. Wong WY, Thomas CM, Merkus JM, et al. Male factor subfertility: possible causes and the impact of nutritional factors. *Fertility and Sterility*. 2000; 73: 435-442.
10. Guyton AC, Hall JE. Female physiology before pregnancy and the female hormones. In: *Textbook of medical physiology*. 10th edition. WB Saunders, Philadelphia, PA; 2000.
11. Meniru GI. The male reproductive system. In: *Cambridge guide to infertility management and assisted reproduction*. Cambridge University Press, Cambridge, UK; 2001.
12. Guyton AC, Hall JE. Reproductive and hormonal functions of the male. In: *Textbook of medical physiology*. 10th edition. WB Saunders, Philadelphia, PA; 2000.
13. Centre for Reviews and Dissemination. The management of subfertility. August 1992. Available at <http://www.york.ac.uk/inst/crd/EHC/ehc13.pdf> (accessed on 27 October 2014).
14. Meniru GI. Female factor problems. In: *Cambridge guide to infertility management and assisted reproduction*. Cambridge University Press, Cambridge, UK; 2001.

Fertility problems

15. National Institute for Health and Care Excellence. Fertility: assessment and treatment for people with fertility problems. February 2013. Available at <http://guidance.nice.org.uk/CG156> (accessed on 27 October 2014).
16. National Institute for Health and Care Excellence. Fertility: assessment and treatment for people with fertility problems. February 2013. Available at <http://guidance.nice.org.uk/CG156> (accessed on 27 October 2014).
17. van Rumste MM, Evers JL, Farquhar CM, et al. Intra-cytoplasmic sperm injection versus partial zonal dissection, subzonal insemination and conventional techniques for oocyte insemination during in vitro fertilisation (Cochrane review). In: The Cochrane Library. Update Software, Oxford, UK.
18. Debus M. Endocrine and reproductive systems. In: Horton-Szar D (editor). Mosby's Crash Course. Mosby, London, UK; 1998.
19. Meniru GI. Male factor problems. In: Cambridge guide to infertility management and assisted reproduction. Cambridge University Press, Cambridge, UK; 2001.
20. National Institute for Health and Care Excellence. Fertility: assessment and treatment for people with fertility problems. February 2013. Available at <http://guidance.nice.org.uk/CG156> (accessed on 27 October 2014).
21. Baby2see.com. Improving your chances for pregnancy. Available at http://www.baby2see.com/preconception/improve_chances.html (accessed on 27 October 2014).
22. Irvine DS. Epidemiology and aetiology of male infertility. *Human Reproduction*. 1998; 13: 33-44.
23. Balen AH, Anderson RA. Impact of obesity on female reproductive health: British Fertility Society, Policy and Practice Guidelines. *Human Fertility*. 2007; 10: 195-206.
24. National Institute for Health and Care Excellence. Fertility: assessment and treatment for people with fertility problems. February 2013. Available at <http://guidance.nice.org.uk/CG156> (accessed on 27 October 2014).
25. Luttjeboer F, Harada T, Hughes E. Tubal flushing for subfertility (Cochrane review). In: The Cochrane Library. Wiley, Chichester, UK.
26. Brown J, Farquhar C, Beck J, et al. Clomiphene and anti-oestrogens for ovulation induction in PCOS. In: The Cochrane Library. Wiley, Chichester, UK.
27. Beck JJ, Boothroyd C, Proctor M, et al. Oral anti-oestrogens and medical adjuncts for subfertility associated with anovulation (Cochrane review). In: The Cochrane Library. Wiley, Chichester, UK.
28. Thessaloniki ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group. Consensus on infertility treatment related to polycystic ovary syndrome. *Fertility & Sterility*. 2008; 89: 505-522.
29. Morbidity and Mortality Weekly Report (MMWR). State-specific variation in rates of twin births: United States, 1992-1994. *Morbidity and Mortality Weekly Report*. 1997; 14: 121-125.
30. Levene MI, Wild J, Steer P. Higher multiple births and the modern management of infertility in Britain. *British Journal of Obstetrics and Gynaecology*. 1992; 99: 607-613.
31. Rossing MA, Daling JR, Weiss NS, et al. Ovarian tumors in a cohort of infertile women. *New England Journal of Medicine*. 1994; 331: 771-776.
32. Jensen A, Sharif H, Frederiksen K, Kjaer SK. Use of fertility drugs and risk of ovarian cancer: Danish Population Based Cohort Study. *BMJ*. 2009; 338: b249.
33. Calderon-Margalit R, Friedlander Y, Yanetz R, et al. Cancer risk after exposure to treatments for ovulation induction. *American Journal of Epidemiology*. 2009; 169: 365-375.
34. Venn A, Watson L, Lumley J, et al. Breast and ovarian cancer incidence after infertility and in vitro fertilisation. *Lancet*. 1995; 346: 995-1000.

Fertility problems

35. Parazzini F, Negri E, La Vecchia C, et al. Treatment for infertility and risk of invasive epithelial ovarian cancer. *Human Reproduction*. 1997; 12: 2159-2161.
36. Mosgaard BJ, Lidegaard O, Kjaer SK, et al. Infertility, fertility drugs, and invasive ovarian cancer: a case-control study. *Fertility and Sterility*. 1997; 67: 1005-1012.
37. Shushan A, Paltiel O, Iscovich J, et al. Human menopausal gonadotropin and the risk of epithelial ovarian cancer. *Fertility and Sterility*. 1996; 65: 13-18.
38. Human Fertilisation and Embryology Authority. The HFEA guide to infertility. Available at http://www.hfea.gov.uk/docs/Section_1_Guide_to_infertility.pdf (accessed on 27 October 2014).
39. Heijnen EM, Eijkemans MJ, De Klerk C. A mild treatment strategy for in vitro fertilisation: a randomised non-inferiority study. *Lancet*. 2007; 369: 743-9.
40. Allersma T, Farquhar C, Cantineau AE. Natural cycle in vitro fertilisation (IVF) for subfertile couples (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
41. Kroon B, Hart RJ, Wong BM, et al. Antibiotics prior to embryo transfer in ART (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
42. Mikkelsen AL, Lindenberg S. Benefit of FSH priming of women with PCOS to the in vitro maturation procedure and the outcome: a randomized prospective study. *Reproduction*. 2001; 122: 587-592.
43. Chian RC, Buckett WM, Tulandi T, et al. Prospective randomized study of human chorionic gonadotrophin priming before immature oocyte retrieval from unstimulated women with polycystic ovarian syndrome. *Human Reproduction*. 2000; 15: 165-170.
44. Lin YH, Hwang JL, Huang LW, et al. Combination of FSH priming and hCG priming for in-vitro maturation of human oocytes. *Human Reproduction*. 2003; 18: 1632-1636.
45. Al-Inany H, Aboulghar M. GnRH antagonist in assisted reproduction. *Human Reproduction*. 2002; 17: 874-885.
46. Nugent D, Vandekerckhove P, Hughes E, et al. Gonadotrophin therapy for ovulation induction in subfertility associated with polycystic ovary syndrome. In: *The Cochrane Library*. Wiley, Chichester, UK.
47. van der Linden M, Buckingham K, Farquhar C, et al. Luteal phase support for assisted reproduction cycles (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
48. Hughes EG, Fedorkow DM, Daya S, et al. The routine use of gonadotropin-releasing hormone agonists prior to in vitro fertilization and gamete intrafallopian transfer: a meta-analysis of randomized controlled trials. *Fertility and Sterility*. 1992; 58: 888-896.
49. Jarrell JF, Labelle R, Goeree R, et al. In vitro fertilization and embryo transfer: a randomized controlled trial. *Online Journal of Current Clinical Trials*. 1993; Document Number 73.
50. Human Fertilisation and Embryology Authority. Facts and figures. Available at http://www.hfea.gov.uk/docs/2010-12-08_Fertility_Facts_and_Figures_2008_Publication_PDF.PDF (accessed on 27 October 2014).
51. Templeton A, Morris JK. IVF: factors affecting outcome. In: Templeton A, Cooke ID, O'Brien PMS (editors). 35th RCOG study group evidence based fertility treatment. RCOG Press, London, UK; 1998.
52. Human Fertilisation and Embryology Authority. Multiple pregnancies and births: considering the risks. December 2006. Available at http://www.hfea.gov.uk/cps/rde/xbcr/SID-3F57D79B-CC25CD59/hfea/multiple_births_final_Nov06.pdf (accessed on 27 October 2014).
53. Nugent D, Vandekerckhove P, Hughes E, et al. Gonadotrophin therapy for ovulation induction in subfertility associated with polycystic ovary syndrome (Cochrane review). In: *The Cochrane Library*. Update Software, Oxford, UK.
54. Brinsden PR, Wada I, Tan SL, et al. Diagnosis, prevention and management of ovarian hyperstimulation syndrome. *British Journal of Obstetrics and Gynaecology*. 1995; 102: 767-772.

Fertility problems

55. Jackson RA, Gibson KA, Wu YW, et al. Perinatal outcomes in singletons following in vitro fertilization: a meta-analysis. *Obstetrics & Gynecology*. 2004; 103: 551-563.
56. Kalra SK, Ratcliffe SJ, Coutifaris C, et al. Ovarian stimulation and low birth weight in newborns conceived through in vitro fertilization. *Obstetrics and Gynecology*. 2011; 118: 863-871.
57. Wennerholm UB, Bergh C. Obstetric outcome and follow-up of children born after in vitro fertilization (IVF). *Human Fertility*. 2000; 3: 52-64.
58. Klemetti R, Sevon T, Gissler M. Health of children born as a result of in vitro fertilisation. *Pediatrics*. 2006; 118: 1819-27.
59. Human Fertilisation and Embryology Authority. Facts and figures. Available at http://www.hfea.gov.uk/docs/2010-12-08_Fertility_Facts_and_Figures_2008_Publication_PDF.PDF (accessed on 27 October 2014).
60. Tang T, Lord JM, Norman RJ, et al. Insulin-sensitising drugs (metformin, rosiglitazone, pioglitazone, D-chiro-inositol) for women with polycystic ovary syndrome, oligo amenorrhoea and subfertility (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
61. Tang T, Lord JM, Norman R, et al. Insulin-sensitising drugs (metformin, rosiglitazone, pioglitazone, D-chiro-inositol) for women with polycystic ovary syndrome, oligo amenorrhoea and subfertility. In: *The Cochrane Library*. Wiley, Chichester, UK.
62. Creanga AA, Bradley HM, McCormick C, et al. Use of metformin in polycystic ovary syndrome: a meta-analysis. *Obstetrics and Gynecology*. 2008; 111: 959-968.
63. Tso LO, Costello MF, Albuquerque LE, et al. Metformin treatment before and during IVF or ICSI in women with polycystic ovary syndrome (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
64. Lord JM, Flight IH, Norman RJ. Insulin-sensitising drugs (metformin, troglitazone, rosiglitazone, pioglitazone, D-chiro-inositol) for polycystic ovary syndrome (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
65. George K, Nair R, Tharyan P, et al. Ovulation triggers in anovulatory women undergoing ovulation induction (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
66. Bayram N, van Wely M, van der Veen F. Recombinant FSH versus urinary gonadotrophins or recombinant FSH for ovulation induction in subfertility associated with polycystic ovary syndrome. In: *The Cochrane Library*. Wiley, Chichester, UK.
67. Wang CF, Gemzell C. The use of human gonadotropins for the induction of ovulation in women with polycystic ovarian disease. *Fertility and Sterility*. 1980; 33: 479-486.
68. Bayram N, van Wely M, van der Veen F. Recombinant FSH versus urinary gonadotrophins or recombinant FSH for ovulation induction in subfertility associated with polycystic ovary syndrome. In: *The Cochrane Library*. Wiley, Chichester, UK.
69. Farquhar C, Lilford RJ, Marjoribanks J, et al. Laparoscopic 'drilling' by diathermy or laser for ovulation induction in anovulatory polycystic ovary syndrome. In: *The Cochrane Library*. Wiley, Chichester, UK.
70. Malkawi HY, Qublan HS, Hamaideh AH. Medical vs. surgical treatment for clomiphene citrate-resistant women with polycystic ovary syndrome. *Journal of Obstetrics and Gynaecology*. 2003; 23: 289-293.
71. Greenblatt EM, Casper RF. Adhesion formation after laparoscopic ovarian cautery for polycystic ovarian syndrome: lack of correlation with pregnancy rate. *Fertility and Sterility*. 1993; 60: 766-770.
72. Deans AC, Wayne C, Toplis PJ. Pelvic infection: a complication of laparoscopic ovarian drilling. *Gynaecological Endoscopy*. 1997; 6: 301-303.
73. Muenstermann U, Kleinstein J. Long-term GnRH analogue treatment is equivalent to laparoscopic laser diathermy in polycystic ovarian syndrome patients with severe ovarian dysfunction. *Human Reproduction*. 2000; 15: 2526-2530.
74. Balen AH, Braat DD, West C, et al. Cumulative conception and live birth rates after the treatment of anovulatory infertility: safety and efficacy of ovulation induction in 200 patients. *Human Reproduction*. 1994; 9: 1563-1570.

Fertility problems

75. Martin KA, Hall JE, Adams JM, et al. Comparison of exogenous gonadotropins and pulsatile gonadotropin-releasing hormone for induction of ovulation in hypogonadotropic amenorrhea. *Journal of Clinical Endocrinology & Metabolism*. 1993; 77: 125-129.
76. Nugent D, Vandekerckhove P, Hughes E, et al. Gonadotrophin therapy for ovulation induction in subfertility associated with polycystic ovary syndrome. In: *The Cochrane Library*. Wiley, Chichester, UK.
77. Bayram N, van Wely M, van der Veen F. Recombinant FSH versus urinary gonadotrophins or recombinant FSH for ovulation induction in subfertility associated with polycystic ovary syndrome. In: *The Cochrane Library*. Wiley, Chichester, UK.
78. Wang CF, Gemzell C. The use of human gonadotropins for the induction of ovulation in women with polycystic ovarian disease. *Fertility and Sterility*. 1980; 33: 479-486.
79. Tummon IS, Asher LJ, Martin JS, et al. Randomized controlled trial of superovulation and insemination for infertility associated with minimal or mild endometriosis. *Fertility and Sterility*. 1997; 68: 8-12.
80. Nulsen JC, Walsh S, Dumez S, et al. A randomized and longitudinal study of human menopausal gonadotropin with intrauterine insemination in the treatment of infertility. *Obstetrics and Gynecology*. 1993; 82: 780-786.
81. Centers for Disease Control and Prevention. 2002 assisted reproductive technology (ART) report: 2002 Fertility Clinic Report by state: national summary. Available at <http://www.cdc.gov/art/ARTReports.htm> (accessed on 27 October 2014).
82. Coticchio G, Bonu MA, Bianchi V, et al. Criteria to assess human oocyte quality after cryopreservation. *Reproductive Biomedicine Online*. 2005; 11: 421-427.
83. National Institute for Health and Care Excellence. Fertility: assessment and treatment for people with fertility problems. February 2013. Available at <http://guidance.nice.org.uk/CG156> (accessed on 27 October 2014).
84. Schmidt KL, Andersen CY, Loft A, et al. Follow-up of ovarian function post-chemotherapy following ovarian cryopreservation and transplantation. *Human Reproduction*. 2005; 20: 3539-3546.
85. Human Fertilisation and Embryology Authority. FAQs about treatment. Available at <http://www.hfea.gov.uk/patient-questions-fertility-treatment.html> (accessed on 27 October 2014).
86. Cheong YC, Dix S, Hung Yu Ng E, et al. Acupuncture and assisted reproductive technology (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
87. Carlsson C. Acupuncture mechanisms for clinically relevant long-term effects: reconsideration and a hypothesis. *Acupuncture Medicine* 2002; 20: 82-99.
88. Frazier LM, Grainger DA, Schieve LA, et al. Follicle-stimulating hormone and estradiol levels independently predict the success of assisted reproductive technology treatment. *Fertility and Sterility*. 2004; 82: 834-840.
89. Human Fertilisation and Embryology Authority. FAQs about treatment. Available at <http://www.hfea.gov.uk/patient-questions-fertility-treatment.html> (accessed on 27 October 2014).
90. Shahine LK, Caughey AB. Preimplantation genetic diagnosis: the earliest form of prenatal diagnosis. *Gynecologic and Obstetric Investigation*. 2005; 60: 39-46.
91. Mastenbroek S, Twisk M, van Echten-Arends J. In vitro fertilization with preimplantation genetic screening. *New England Journal of Medicine*. 2007; 357: 9-17.
92. van Rumste MME, Evers JLH, Farquhar CM. Intra-cytoplasmic sperm injection versus conventional techniques for oocyte insemination during in vitro fertilisation in patients with non-male subfertility (Cochrane review). In: *The Cochrane Library*. Update Software, Oxford, UK.
93. Human Fertilisation and Embryology Authority. Facts and figures. Available at http://www.hfea.gov.uk/docs/2010-12-08_Fertility_Facts_and_Figures_2008_Publication_PDF.PDF (accessed on 27 October 2014).

Fertility problems

94. Wennerholm UB, Bergh C, Hamberger L, et al. Obstetric outcome of pregnancies following ICSI, classified according to sperm origin and quality. *Human Reproduction*. 2000; 15: 1189-1194.
95. Kurinczuk JJ, Bower C. Birth defects in infants conceived by intracytoplasmic sperm injection: an alternative interpretation. *BMJ*. 1997; 315: 1260-1265.
96. te Velde ER, van Baar AL, van Kooij RJ. Concerns about assisted reproduction. *Lancet*. 1998; 351: 1524-1525.
97. van Rumste MM, Evers JL, Farquhar CM, et al. Intra-cytoplasmic sperm injection versus partial zonal dissection, subzonal insemination and conventional techniques for oocyte insemination during in vitro fertilisation (Cochrane review). In: *The Cochrane Library*. Update Software, Oxford, UK.
98. Barnhart K, Dunsmoor-Su R, Coutifaris C. Effect of endometriosis on in vitro fertilization. *Fertility and Sterility*. 2002; 77: 1148-1155.
99. Filippini F, Darai E, Benifla JL, et al. Distal tubal surgery: a critical review of 104 laparoscopic distal tuboplasties. *Journal de Gynecologie, Obstetrique et Biologie de la Reproduction*. 1996; 25: 471-478 [in French].
100. Donnez J, Casanas-Roux F. Prognostic factors of fimbrial microsurgery. *Fertility and Sterility*. 1986; 46: 200-204.
101. Tomazevic T, Ribic-Pucelj M, Omahen A, et al. Microsurgery and in vitro fertilization and embryo transfer for infertility resulting from pathological proximal tubal blockage. *Human Reproduction*. 1996; 11: 2613-2617.
102. Wu CH, Gocial B. A pelvic scoring system for infertility surgery. *International journal of infertility*. 1988; 33: 341-346.
103. Oelsner G, Sivan E, Goldenberg M, et al. Should lysis of adhesions be performed when in vitro fertilization and embryo transfer are available? *Human Reproduction*. 1994; 90: 2339-2341
104. Gillett WR, Clarke RH, Herbison GP. First and subsequent pregnancies after tubal microsurgery: evaluation of the fertility index. *Fertility and Sterility*. 1997; 68: 1033-1042.
105. Johnson NP, Mak W, Sowter MC. Surgical treatment for tubal disease in women due to undergo in vitro fertilisation (Cochrane review). In: *The Cochrane Library*. Update Software, Oxford, UK.
106. Chapron C, Querleu D, Bruhat MA, et al. Surgical complications of diagnostic and operative gynaecological laparoscopy: a series of 29,966 cases. *Human Reproduction*. 1998; 13: 867-872.
107. Holst N, Maltau JM, Forsdahl F, et al. Handling of tubal infertility after introduction of in vitro fertilization: changes and consequences. *Fertility and Sterility*. 1991; 55: 140-143.
108. Vilos GA, Verhoest CR, Martin JS. Economic evaluation of in vitro fertilization-embryo transfer and neosalpingostomy for bilateral tubal obstruction. *Journal of the Society of Obstetrics and Gynecology in Canada*. 1998; 20: 139-147.
109. Winston RM, Margara RA. Microsurgical salpingostomy is not an obsolete procedure. *British Journal of Obstetrics & Gynaecology*. 1991; 98: 637-642.
110. Filippini F, Darai E, Benifla JL, et al. Distal tubal surgery: a critical review of 104 laparoscopic distal tuboplasties. *Journal de Gynecologie, Obstetrique et Biologie de la Reproduction*. 1996; 25: 471-478 [in French].
111. Donnez J, Casanas-Roux F. Prognostic factors of fimbrial microsurgery. *Fertility and Sterility*. 1986; 46: 200-204.
112. Tomazevic T, Ribic-Pucelj M, Omahen A, et al. Microsurgery and in vitro fertilization and embryo transfer for infertility resulting from pathological proximal tubal blockage. *Human Reproduction*. 1996; 11: 2613-2617.
113. Wu CH, Gocial B. A pelvic scoring system for infertility surgery. *International journal of infertility*. 1988; 33: 341-346.
114. Oelsner G, Sivan E, Goldenberg M, et al. Should lysis of adhesions be performed when in vitro fertilization and embryo transfer are available? *Human Reproduction*. 1994; 90: 2339-2341
115. Watson A, Vandekerckhove P, Lilford R. Techniques for pelvic surgery in subfertility (Cochrane review). In: *The Cochrane Library*. Update Software, Oxford, UK.

Fertility problems

116. Honore GM, Holden AE, Schenken RS, et al. Pathophysiology and management of proximal tubal blockage. *Fertility and Sterility*. 1999; 71: 785-795.
117. Honore GM, Holden AE, Schenken RS, et al. Pathophysiology and management of proximal tubal blockage. *Fertility and Sterility*. 1999; 71: 785-795.
118. National Institute for Health and Care Excellence. Fertility: assessment and treatment for people with fertility problems. February 2013. Available at <http://guidance.nice.org.uk/CG156> (accessed on 27 October 2014).
119. Nulsen JC, Walsh S, Dumez S, et al. A randomized and longitudinal study of human menopausal gonadotropin with intrauterine insemination in the treatment of infertility. *Obstetrics and Gynecology*. 1993; 82: 780-786.
120. Cantineau AEP, Heineman MJ, Cohlen BJ. Single versus double intrauterine insemination (IUI) in stimulated cycles for subfertile couples (Cochrane review). In: *The Cochrane Library*. Update Software, Oxford, UK.
121. Fedele L, Bianchi S, Marchini M, et al. Superovulation with human menopausal gonadotropins in the treatment of infertility associated with minimal or mild endometriosis: a controlled randomized study. *Fertility and Sterility*. 1992; 58: 28-31.
122. Cantineau AEP, Heineman MJ, Cohlen BJ. Single versus double intrauterine insemination (IUI) in stimulated cycles for subfertile couples (Cochrane review). In: *The Cochrane Library*. Update Software, Oxford, UK.
123. Jacobson TZ, Barlow DH, Koninckx PR, et al. Laparoscopic surgery for subfertility associated with endometriosis (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
124. Jacobson TZ, Barlow DH, Garry R, et al. Laparoscopic surgery for pelvic pain associated with endometriosis (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
125. Barnhart K, Dunsmoor-Su R, Coutifaris C. Effect of endometriosis on in vitro fertilization. *Fertility and Sterility*. 2002; 77: 1148-1155.
126. Human Fertilisation and Embryology Authority. Facts and figures. Available at http://www.hfea.gov.uk/docs/2010-12-08_Fertility_Facts_and_Figures_2008_Publication_PDF.PDF (accessed on 27 October 2014).
127. Geber S, Paraschos T, Atkinson G, et al. Results of IVF in patients with endometriosis: the severity of the disease does not affect outcome, or the incidence of miscarriage. *Human Reproduction*. 1995; 10: 1507-1511.
128. Olivennes F, Feldberg D, Liu HC, et al. Endometriosis: a stage by stage analysis: the role of in vitro fertilization. *Fertility and Sterility*. 1995; 64: 392-398.
129. Hughes E, Fedorkow D, Collins J, et al. Ovulation suppression for endometriosis (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
130. Dockeray CJ, Sheppard BL, Bonnar J. Comparison between mefenamic acid and danazol in the treatment of established menorrhagia. *British Journal of Obstetrics and Gynaecology*. 1989; 96: 840-844.
131. Ford WC, Mathur RS, Hull MG. Intrauterine insemination: is it an effective treatment for male factor infertility? *Baillieres Clinical Obstetrics & Gynaecology*. 1997; 11: 691-710.
132. Bendsdorp AJ, Cohlen BJ, Heineman MJ. Intra-uterine insemination for male subfertility. In: *The Cochrane Library*. Wiley, Chichester, UK.
133. Cohlen BJ, Vandekerckhove P, Te Velde ER, et al. Timed intercourse versus intra-uterine insemination with or without ovarian hyperstimulation for subfertility in men (Cochrane review). In: *The Cochrane Library*. Update Software, Oxford, UK.
134. Human Fertilisation and Embryology Authority. Facts and figures. Available at http://www.hfea.gov.uk/docs/2010-12-08_Fertility_Facts_and_Figures_2008_Publication_PDF.PDF (accessed on 27 October 2014).
135. Tanbo T, Bakketeig LS, Jacobsen G, et al. Children born from intracytoplasmic sperm injection systematic review. Norwegian Centre for Health Technology Assessment, Oslo, Norway; 2002.

Fertility problems

136. Bonduelle M, Legein J, Derde MP, et al. Comparative follow-up study of 130 children born after intracytoplasmic sperm injection and 130 children born after in-vitro fertilization. *Human Reproduction*. 1995; 10: 3327-3331.
137. Human Fertilisation and Embryology Authority. HFEA guide to infertility. Section 2: your treatment issues. Available at http://www.hfea.gov.uk/docs/Guide_to_infertility_Part_2.pdf (accessed on 27 October 2014).
138. National Institute for Health and Care Excellence. Fertility: assessment and treatment for people with fertility problems. February 2013. Available at <http://guidance.nice.org.uk/CG156> (accessed on 27 October 2014).
139. Cooke ID. Donor insemination: timing and insemination method. In: Templeton A, Cooke ID, O'Brien PMS (editors). 35th RCOG Study Group evidence-based fertility treatment. RCOG Press, London, UK; 1998.
140. Le Lannou D, Lansac J. Artificial procreation with frozen donor sperm: the French experience of CECOS. In: Barratt CLR, Cooke ID (editors). Donor insemination. Cambridge University Press, Cambridge, UK; 1993.
141. Besselink DE, Farquhar C, Kremer JAM. Cervical insemination versus intra-uterine insemination of donor sperm for subfertility (Cochrane review). In: The Cochrane Library. Wiley, Chichester, UK.
142. Human Fertilisation and Embryology Authority. Facts and figures. Available at http://www.hfea.gov.uk/docs/2010-12-08_Fertility_Facts_and_Figures_2008_Publication_PDF.PDF (accessed on 27 October 2014).
143. Human Fertilisation and Embryology Authority. Fertility facts and figures. Available at http://www.hfea.gov.uk/docs/2010-12-08_Fertility_Facts_and_Figures_2008_Publication_PDF.PDF (accessed on 27 October 2014).
144. Human Fertilisation and Embryology Authority. The HFEA guide to infertility. Part 1: before treatment begins. Available at http://www.hfea.gov.uk/docs/Section_1_Guide_to_infertility.pdf (accessed on 27 October 2014).
145. Human Fertilisation and Embryology Authority. Multiple pregnancies and births: considering the risks. December 2006. Available at http://www.hfea.gov.uk/cps/rde/xbc/SID-3F57D79B-CC25CD59/hfea/multiple_births_final_Nov06.pdf (accessed on 27 October 2014).
146. Leeton J, Rogers P, Caro C, et al. A controlled study between the use of gamete intrafallopian transfer (GIFT) and in vitro fertilization and embryo transfer in the management of idiopathic and male infertility. *Fertility and Sterility*. 1987; 48: 605-607.
147. Cantineau AE, Cohlen BJ, Heineman MJ, et al. Intrauterine insemination versus fallopian tube sperm perfusion for non-tubal infertility (Cochrane review). In: The Cochrane Library. Wiley, Chichester, UK.
148. Verhulst SM, Cohlen BJ, Hughes E, et al. Intra-uterine insemination for unexplained subfertility. In: The Cochrane Library. Wiley, Chichester, UK.
149. Hughes EG. The effectiveness of ovulation induction and intrauterine insemination in the treatment of persistent infertility: a meta-analysis. *Human Reproduction*. 1997; 12: 1865-1872.
150. Zeyneloglu HB, Arici A, Olive DL, et al. Comparison of intrauterine insemination with timed intercourse in superovulated cycles with gonadotropins: a meta-analysis. *Fertility and Sterility*. 1998; 69: 486-491.
151. Trout SW, Kemmann E. Fallopian sperm perfusion versus intrauterine insemination: a randomized controlled trial and meta-analysis of the literature. *Fertility and Sterility*. 1999; 71: 881-885.
152. Sengoku K, Tamate K, Takaoka Y, et al. The clinical efficacy of low-dose step-up follicle stimulating hormone administration for treatment of unexplained infertility. *Human Reproduction*. 1999; 14: 349-353.
153. Guzick DS, Carson SA, Coutifaris C, et al. Efficacy of superovulation and intrauterine insemination in the treatment of infertility. *New England Journal of Medicine*. 1999; 340: 177-183.
154. Pandian Z, Bhattacharya S, Nikolaou D, et al. In vitro fertilisation for unexplained subfertility (Cochrane Review). In: The Cochrane Library. Update Software, Oxford, UK.

Fertility problems

155. Human Fertilisation and Embryology Authority. Fertility facts and figures. Available at http://www.hfea.gov.uk/docs/2010-12-08_Fertility_Facts_and_Figures_2008_Publication_PDF.PDF (accessed on 27 October 2014).
156. Pandian Z, Bhattacharya S, Nikolaou D, et al. In vitro fertilisation for unexplained subfertility (Cochrane Review). In: The Cochrane Library. Update Software, Oxford, UK.
157. Murdoch AP, Harris M, Mahroo M, et al. Gamete intrafallopian transfer (GIFT) compared with intrauterine insemination in the treatment of unexplained infertility. *British Journal of Obstetrics & Gynaecology*. 1991; 98: 1107-1111.
158. Wessels PH, Cronje HS, Oosthuizen AP, et al. Cost-effectiveness of gamete intrafallopian transfer in comparison with induction of ovulation with gonadotropins in the treatment of female infertility: a clinical trial. *Fertility and Sterility*. 1992; 57: 163-167.
159. Hogerzeil HV, Spiekerman JC, de Vries JW, et al. A randomized trial between GIFT and ovarian stimulation for the treatment of unexplained infertility and failed artificial insemination by donor. *Human Reproduction*. 1992; 7: 1235-1239.
160. Meirou D, Schenker JG. Appraisal of gamete intrafallopian transfer. *European Journal of Obstetrics, Gynecology, & Reproductive Biology*. 1995; 58: 59-65.
161. Bhattacharya S, Harrild K, Mollison J, et al. Clomifene citrate or unstimulated intrauterine insemination compared with expectant management for unexplained infertility: Pragmatic randomised controlled trial. *BMJ*. 2008; 337: 387-390
162. British National Formulary. Clomifene citrate. Section 6.5.1. British Medical Association and Royal Pharmaceutical Society of Great Britain. Also available at <http://bnf.org> (accessed on 27 October 2014).
163. The Multiple Births Foundation. Multiple birth statistics. Available at <http://www.multiplebirths.org.uk/media.asp> (accessed on 27 October 2014).
164. Hughes E, Brown, J, Collins J, et al. Clomiphene citrate for unexplained subfertility in women (Cochrane review). In: The Cochrane Library. Wiley, Chichester, UK.

This information is aimed at a UK patient audience. This information however does not replace medical advice. If you have a medical problem please see your doctor. Please see our full [Conditions of Use](#) for this content. For more information about this condition and sources of the information contained in this leaflet please visit the Best Health website, <http://besthealth.bmj.com>. These leaflets are reviewed annually.

