

Patient information from the BMJ Group

Slipped disc

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Slipped disc

A slipped disc can give you very bad back pain. You may feel you can't do the things you usually do, but staying active may help you recover more quickly. Most people get better on their own, but if your back pain doesn't go away surgery can help.

We've brought together the best research about slipped disc 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 a slipped disc?

A slipped disc can be very painful. It means one of the discs in your spine has been damaged and may be pressing on a nerve.

The good news is that pain from a slipped disc generally gets better on its own within about six weeks. ^[1]

Here, we look at what happens when a disc in the lower part of your back is damaged.

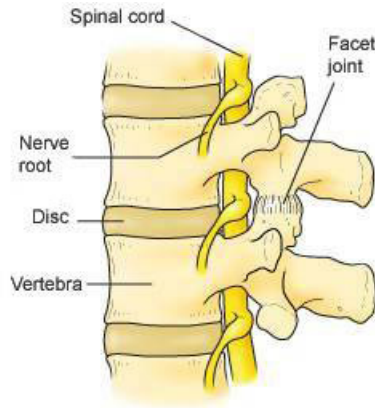
Key points about slipped discs

- A slipped disc can cause severe back pain.
- Most people who have a slipped disc also get sciatica. This is a sharp, stabbing pain that runs down through one buttock and into one of your legs. It happens if the disc presses on a nerve.
- Slipped discs are not very common. Only about 1 in 25 people who have pain in their lower back caused by a physical problem have a slipped disc. ^[1]
- Although it can be painful, a slipped disc isn't usually dangerous. It will probably get better on its own. ^[2]
- Surgery can help, but it's worth waiting a while to see if you get better without it. ^[2]

Slipped disc

We've called this condition slipped disc because that's what most people know it as, even though the disc hasn't really 'slipped' at all. Doctors call this condition a **herniated disc**. You may also hear people call it a ruptured disc or a disc prolapse.

What is a disc?



Discs are part of your backbone. They lie between your vertebrae.

Discs are part of your backbone, which is also called your spine. They are round pads of spongy tissue. Each disc has a tough outer ring and a soft, jelly-like centre.

- The discs lie between your **vertebrae**. The vertebrae are the 33 bones that make up your spine.
- Each vertebra is linked to the next one by small joints that lock together. They are called **facet joints**. You can bend and twist your spine because of these joints.
- The discs cushion the bones in your spine and stop them being damaged when you jump or run.
- Discs also allow the bones in your spine to give when you move. This means you can bend over, arch your back, and twist your body.

Your spinal cord

As well as supporting your body, your spine also carries a bundle of nerves running from your brain to the base of your back. This is called the **spinal cord**.

- The bones that make up your spine have holes in the centre. The holes make a tunnel all the way down your back. This is where your spinal cord fits.
- Nerves coming out of the bottom of your spinal cord carry messages between your legs and your brain. Other nerves pass through small openings between the bones in your spine. These nerves branch off to every part of your body.

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Your sciatic nerves



Your sciatic nerves are the main nerves in your legs.

Your sciatic nerves are the main nerves in your legs. You have one in each leg. If you have a slipped disc it can damage these nerves.

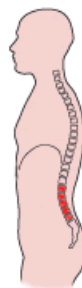
- Your sciatic nerves are made up of smaller nerves that travel down your leg.
- They run from the base of your back to your buttocks and down the back of your thighs.
- Above the back of your knees they divide into two branches. These run down through your knees to your feet.

How your backbone is held together

Besides the bones, joints, nerves, and discs in your back, you also have:

- Muscles
- Cartilage
- Tendons
- Ligaments .

These work together to allow you to bend, stretch, and twist.



Slipped disc

The lower part of the spine is where discs most often get damaged.

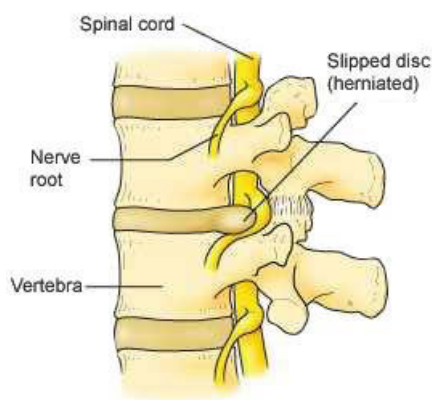
What happens when I get a slipped disc?

Sometimes a disc gets damaged. The discs that get damaged most often are in the lower part of your back, especially the ones between the last five bones in your spine (the lumbar region).

These discs are called the **lumbar discs**. They get damaged more often than other discs because they're under more pressure.

The tough outer ring of the disc tears. The jelly-like centre bulges through the tear in the disc.

The damaged part of the disc might press on the roots of the nerves coming out of the spinal cord. If it does, it causes pain and muscle weakness. It can also cause **inflammation** in your spine.



When you get a slipped disc, the outer ring of the disc tears and the jelly-like centre bulges out.

Sciatica

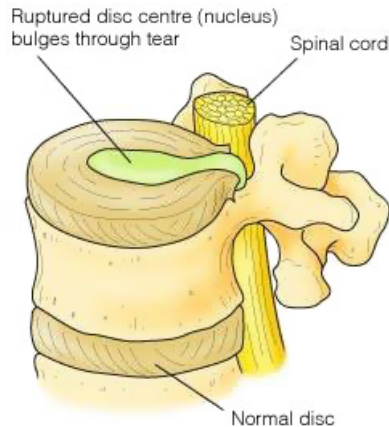
When a disc in the lower part of your spine gets damaged, it's likely to press on the nerves near your spinal cord that become your sciatic nerves. That's why it can cause aching in your buttocks, thigh, legs, and feet. This pain is called **sciatica**.

How bad is it?

Sometimes only a little bit of the disc bulges out of place. But if a lot of the disc gets damaged, it can put quite a lot of pressure on the nerves. Sometimes a piece of the disc may break off completely. ^[3]

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Why do discs get damaged?



How a slipped disc forms: see how the disc centre bulges through a tear and presses on the spinal cord.

As you get older, the discs in your back might begin to wear out. They become weaker, thinner, and less spongy. ^[4] If that happens, the outer ring of the disc is more likely to crack or tear. Then the centre can bulge through more easily. ^[5]

The way you stand, sit, and move can affect whether your discs get damaged. Having a job where you have to lift things a lot puts strain on the discs in your lower back.

Other types of low back pain

Most of us have pain in our lower back at some point in our lives. ^[1] Usually, the problem gets better on its own within a couple of weeks. ^[1]

It can be difficult for doctors to pinpoint the exact cause of low back pain, even with the help of tests such as **X-rays**.

But most low back pain is not caused by a disc problem. Only about 1 in 25 people who have low back pain because of a physical problem have a slipped disc. Low back pain is usually caused by a minor injury, such as a strained muscle or ligament.

To learn more, see our information on [Back pain](#).

Slipped disc: why me?

We don't know for certain why some people get a slipped disc and others don't. But there are things that make it more likely. These are called risk factors. There are many risk factors for a slipped disc.

Getting older

The discs in your backbone (spine) begin to wear out as you get older. When you're 20 the discs in your back should be supple and healthy. But three-quarters of 70-year-olds

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have signs of wear and tear in their discs.^[6] Men's discs show wear and tear more quickly than women's.^[7]

Having a job where you do a lot of lifting

If you have to lift or carry heavy things to do your job your discs may show more wear and tear than other people's.^[7] Bending and twisting may put extra pressure on your discs. Some research shows this can damage them.^[6]

Having a job where you have to sit for a long time

Sitting down for long periods of time has been linked to disc damage. The lower part of your back has to support the weight of your upper body when you're sitting. This can put a lot of extra pressure on your discs and squash them.^[8]

If the muscles in your back are in good condition they can support your backbone. This makes it less likely that you'll damage a disc. But people who sit in one place to do their jobs are more likely to have weak back muscles. So these people are more likely to have damaged discs.

Driving

Driving, especially for work, means sitting. If you drive for many hours at a time, you get a lot of vibration from the engine and uneven road surfaces. This may make it more likely that the discs in your spine will show wear and tear.^[7]

Being very overweight

Your spine carries the weight of your upper body. The heavier you are, the more pressure there is on the bones and discs in your spine. Men who are very overweight are up to three times more likely to get a slipped disc.^[8]

One way to find out if you're overweight is to work out your [body mass index](#) (BMI for short). The BMI takes height into consideration, not just weight. If your BMI is more than 25 usually it means you are overweight. But some people, such as athletes, have a high BMI because they have more muscle than most people. So BMI is only a rough guide.

Smoking

People who smoke seem to have a higher chance of getting a slipped disc.^[9] Researchers aren't sure why this is. The poisonous chemicals in cigarette smoke may damage the discs in your spine. And people who smoke heavily tend to cough a lot, which can put a strain on the backbone.

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Having spine problems in your family

Research shows that our **genes** may play a part in whether we have disc problems. Some people appear to inherit a tendency from their parents for the discs to wear out. ^[10]

Being male

Men are twice as likely as women to get a slipped disc. ^[11]

Doing certain sports

Taking part in sports that include pushing or lifting weights, such as rugby and weight lifting, can make it more likely that your discs will get damaged. ^[9]

What are the symptoms of a slipped disc?

Back pain can be caused by many things. Only about 1 in 25 people with pain in their lower back have a slipped disc. ^[1] If you have a slipped disc the pain is caused by the damaged disc pressing on a nerve.

The main symptoms of a slipped disc are back pain and sciatica. Sciatica is a pain that spreads down through your buttock and your leg.

Back pain

The pain from a slipped disc can start in different ways. You might feel an ache in your lower back after you do something that you're not used to, even something like raking autumn leaves. ^[5] Some hours later, the pain gets so bad that you can't move about easily.

Or you may get severe pain all of a sudden, without warning. Some people say it can feel like being stabbed with a knife.

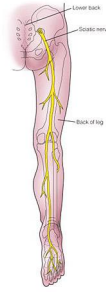
Serious pain can stop you carrying out your normal activities. It's worth seeing your GP about it. To find out whether you have a slipped disc, your GP will need to find out if doing different kinds of movements hurts you. ^[12]

Sciatica

If you have a slipped disc, you'll almost always get pain in your buttocks, thighs, legs, and feet. Usually the pain is only on one side.

You may also get numbness, weakness, or tingling in the same area.

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Your sciatic nerves run from the base of your back to your toes.

These symptoms mean the damaged disc is pressing on a **sciatic nerve**. These nerves travel from the base of your back through your buttocks and down the back of each leg to your feet.

Sciatica can come on at the same time as the back pain or it may come on later. The pain may move from your lower back to your leg.

With sciatica you can find it uncomfortable to sit down, stand up, or bend over. You will also find it painful to lift the affected leg while you're lying down. This is one of the tests doctors use to [diagnose sciatica](#) .

You can often get relief by getting into certain comfortable positions, such as lying down. ^[13]

Although 9 in 10 people with sciatica do have a slipped disc, having sciatica doesn't prove that you have a damaged disc. About 1 in 10 people with sciatica get it because of other problems. ^[14]

To learn more, see [Do I have sciatica?](#)

Warning signs of something more serious

If you have back pain and you also lose control of your bowels or bladder, or if your arms or legs feel numb or weak, you need to get medical help at once. These symptoms can mean one of two things.

- Your slipped disc could be pressing on the spinal cord (doctors call this spinal cord compression).
- Your slipped disc could be pressing on the nerves that run down from the bottom of the spinal cord. Doctors call these nerves the **cauda equina**. If these nerves are being damaged, it is called cauda equina syndrome.

We don't talk about treating spinal cord compression or cauda equina syndrome here. But they are medical emergencies. If you have these symptoms, you may need urgent surgery to relieve the pressure on the affected nerves.

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How do doctors diagnose a slipped disc?

Sometimes it's difficult for a doctor to diagnose the cause of low back pain and sciatica.

Your doctor will ask you questions about your back problems and your symptoms. If your back pain does not go away, you may need an **MRI** or **CT scan**, or an **X-ray**. This helps your doctor see what's happening in your back.

Seeing your GP

Your GP will ask you some questions about how and when your symptoms started. And you'll probably have a physical examination.^[1] This helps to rule out other conditions that can cause back pain and sciatica.

You may be asked to remove some or all of your outer clothes so that your doctor can see your back and the skin of your legs and feet.

Your doctor will ask you about the pain and other feelings you have in different parts of your legs, feet, and toes.^[8] To check that your sense of touch is working properly, your doctor may give you pinpricks on the back of your leg or on your foot.^[21]

Your doctor may test the strength of your muscles by asking you to push against his or her hand. He or she will also test the reflexes in your knees and ankles, by gently tapping just below your kneecaps with a special hammer (to test your knee reflexes) and just above your heels (to test your ankle reflexes). A slipped disc can cause you to lose a reflex in the leg that is affected by sciatica.

Straight leg raising test

The straight leg raising test is one that doctors often use to help diagnose a slipped disc. Your doctor may ask you to lie on your back and then raise the painful leg, without bending your knee. Most people with a slipped disc get sciatica pain before their leg is two-thirds of the way up. This suggests a slipped disc, but it isn't proof.^[1]

At this point your GP may be able to reassure you that your back pain is not serious and will probably clear up on its own. He or she may give you advice about how to improve your posture and look after your back, and might also tell you if there are any exercises that may help you.

Tests in hospital

There are more tests you can have in hospital. If you've had back pain for only a couple of weeks your GP may say that it's too early to go in for hospital tests. If your back pain isn't any better after one month or so your doctor may order further tests or refer you to a doctor who specialises in back problems.

The National Institute for Health and Care Excellence (NICE) is a government body that advises doctors. NICE says that people with nerve root pain (such as sciatica) should

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be referred to a specialist if the pain hasn't got better after six weeks. NICE also says that the appointment should preferably be made within three weeks. ^[22]

Having a scan

Having a scan of your spine is especially important if you are considering surgery for your back pain. Surgery won't help if the cause of your back pain is something like a strained muscle or ligament. A scan can help doctors find out if a slipped disc is causing your back pain. ^[23] It can also be used to rule out more serious problems such as cancer.

A scan gives doctors a detailed picture of your spine. Two kinds of scans can be used: a CT scan and an MRI scan.

MRI scan

When you have an MRI scan, you lie inside a machine that uses a magnetic field and radio waves to make a very clear picture of all the parts of your back. You lie on a table that slides into a compartment that's actually a big magnet. It's generally safe to have one of these scans, but some people - such as people who have pacemakers - should not have an MRI. You will be asked some questions to be certain an MRI is safe for you.

You're in a small space while you have the scan. This makes some people feel anxious (claustrophobic). Often you can listen to the radio or to music while you're having the scan. This can be helpful if you are anxious. But there is a 'panic button' you can push if you feel too nervous. If you push it, the scan stops and the technician will take you out of the scanner.

Doctors now think this kind of scan is the best way to confirm you have a slipped disc. That's because it gives such a clear picture of the structures inside the back, including the softer parts that don't show up well with a CT scan.

CT scan

A CT scan uses a computer and X-rays to produce a picture of your back. Usually, you lie flat while the scanner moves around your back.

An MRI scan is best to be sure that you have a slipped disc, because it makes a clear picture of the softer parts of the back too.

The pros and cons of a scan

MRI scans make it possible to see the discs of the lower back and to spot a slipped disc.

But finding a bulging disc on a scan is not cast-iron proof that the disc is causing your back pain or sciatica.

About two-thirds of people who have this kind of scan find that they have disc problems (including a slipped disc), even though they don't have pain in the lower back or any other symptoms. ^[13] So if you have a scan, it could find a disc problem that isn't causing back pain. This could lead to you having surgery that you don't need. ^[24] ^[25]

Slipped disc

Most people with slipped discs get better without having surgery.^[1]

How common is a slipped disc?

A lot of people have back pain, but pain caused by a slipped disc isn't very common.

Almost one half of adults in the UK say they've had low back pain lasting for at least 24 hours in the past 12 months.^[15] But of all the people with back pain that's caused by a physical problem, only about 1 in 25 have a slipped disc.^[1] To read about other causes, see our information on [Back pain](#) .

Slipped discs tends to happen in people aged between 30 and 50.^[16] Men are twice as likely to be affected as women.^[11]

What treatments work for a slipped disc?

A slipped disc can be very painful. It means one of the discs in your spine has been damaged and may be pressing on a nerve.

The good news is that a slipped disc generally gets better on its own, usually within about six weeks.^[1]

Here we look at treatments for back pain and sciatica caused by a slipped disc in the lower part of your back.

Key points about treating pain caused by a slipped disc

- Staying active is probably better for you than lying in bed for a long time, but researchers don't know for certain.
- Having your spine manipulated by a trained therapist can help treat pain caused by a slipped disc.
- Taking painkillers or getting painkilling injections may help for a short time.
- Surgery can repair the damaged disc, but it's worth waiting a while, as it will probably get better on its own.

Treatments for a slipped disc

We've divided the treatments for slipped disc into three categories: non-drug treatments, drug treatments, and surgery.

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

Slipped disc

- [Non-drug treatments for slipped disc](#) : There are many different things you can try that do not involve taking drugs or having surgery. They include having your spine manipulated, acupuncture, and following a programme of exercise. [More...](#)
- [Drug treatments for slipped disc](#) : These treatments include painkillers, muscle relaxants, and steroid injections. [More...](#)
- [Surgery for slipped disc](#) : There are many different ways to repair a slipped disc with surgery. Doctors can do operations using a microscope or laser. And they can make a small cut rather than making a large cut. [More...](#)

Treatment Group 1

Non-drug treatments for slipped disc

A slipped disc usually gets better on its own in about six weeks. But you may want to try some non-drug treatments to make you more comfortable.

Key points about non-drug treatments for slipped disc

- Staying active is probably better for you than lying in bed for a long time, but researchers don't know for certain.
- Having your spine manipulated by a trained therapist can help treat pain caused by a slipped disc.
- Many other non-drug treatments have been tried for low back pain. These include acupuncture, heat, ice, and massage. But there's very little research to show whether or not they work for slipped disc.
- Traction, which is used to gently stretch the spine, is unlikely to help if you've got a slipped disc.

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

Non-drug treatments for slipped disc

Treatments that are likely to work

- [Spinal manipulation](#) : A physiotherapist (or another trained person such as an osteopath or chiropractor) works your spine with his or her hands. The idea is that this takes pressure off the nerve root and relieves your pain. [More...](#)

Slipped disc

Treatments that need further study

- [Acupuncture](#) : This is where thin needles are inserted into areas of the back to relieve pain. [More...](#)
- [Exercise therapy](#) : This is a structured programme of exercises designed to strengthen your back, keep you flexible, and increase your general fitness. [More...](#)
- [Staying active](#) : You keep doing your normal activities as much as possible. [More...](#)
- [Massage](#) : A physiotherapist or massage therapist rubs or kneads the skin and muscles of your back or leg to reduce pain or make it easier for you to move. [More...](#)
- [Ice or heat](#) : You use heat or cold on your back to ease pain and make it easier to move. [More...](#)

Treatments that are unlikely to work

- [Bed rest](#) : You lie flat on a firm bed and stay still to try to help symptoms. [More...](#)
- [Traction](#) : This treatment is done by physiotherapists. It is used to gently stretch the spine. [More...](#)

Other treatments

There are some other ways of dealing with back pain and sciatica caused by a slipped disc. We haven't looked at the research for these in the same detail we have for the other treatments we cover. (To learn more, see Our method.) But we have included some information because people may want to know about them.

- [Corsets and braces](#)
- [Transcutaneous electrical nerve stimulation \(TENS\)](#)

Treatment Group 2

Drug treatments for slipped disc

A slipped disc usually gets better on its own in about six weeks. Some drug treatments may help you feel more comfortable.

Key points about drug treatments for slipped disc

- Taking painkillers or getting painkilling injections may help for a short time.
- Nonsteroidal anti-inflammatory drugs (called NSAIDs for short) are unlikely to help.

Slipped disc

- Some other drugs may be tried to help the pain of a slipped disc. These include drugs that relax muscles, steroid injections, antidepressants, and a drug called infliximab. But there hasn't been enough good research to say whether or not they work.

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

Drug treatments for slipped disc

Treatments that are likely to work

- [Painkillers](#) : These drugs can sometimes ease the pain and sciatica caused by a slipped disc. [More...](#)

Treatments that need further study

- [Antidepressants](#) : These are drugs that are used to help with [depression](#) . But sometimes they're also used to relieve pain. [More...](#)
- [Infliximab](#) : This drug (brand name Remicade) is used to treat disorders where there is swelling. [More...](#)
- [Muscle relaxants](#) : These drugs relax your muscles. They may also make you feel calmer. [More...](#)
- [Steroids injected into the spine](#) : Doctors inject these drugs into the gap between the bones of the lower back to reduce inflammation and relieve pain. [More...](#)

Treatments that are unlikely to work

- [Nonsteroidal anti-inflammatory drugs \(NSAIDs\)](#) : These drugs can reduce inflammation and pain caused by some diseases. But they don't help pain from a slipped disc. [More...](#)

Other treatments

Chemonucleolysis is another way of dealing with back pain and sciatica caused by a slipped disc. We haven't looked at the research for this in the same detail we have for other treatments. (To learn more, see Our method.) But we have included some information because you may want to know about it.

- [Chemonucleolysis](#)

Treatment Group 3

Surgery for slipped disc

If your slipped disc does not get better on its own and you have been in pain for some months you may need to think about surgery.

Keys points about surgery for slipped disc

- Surgery can repair the damaged disc, but it's worth waiting a while, as it will often get better on its own.
- Surgery can get rid of pain quickly, but it only works for some people.
- Surgery that's done with a special microscope works as well as standard surgery, and you recover faster.
- You can also have laser surgery through a needle in the skin. But there's less research on whether or not this works.
- Whatever kind of surgery you have, there's a chance that you may need to have another operation eventually.

Which type of surgery works best for a slipped disc? We've looked at the research and given a rating for each treatment according to how well it works.

Surgery for slipped disc

Treatments that are likely to work

- [Discectomy \(standard surgery for slipped disc\)](#) : This is an operation to remove the damaged part of the disc. [More...](#)
- [Microdiscectomy \(surgery using a microscope\)](#) : This operation also removes part of the disc, but the doctor uses a microscope to do it. That means the doctor makes a smaller cut than with standard surgery. [More...](#)

Treatments that need further study

- [Percutaneous discectomy \(disc surgery through a small hole in the skin\)](#) : This is an operation to take out the damaged parts of the disc, but doctors make only a tiny hole in the skin. It's not such a major operation as standard surgery. [More...](#)
- [Laser surgery](#) : Surgeons use a high-energy light called a laser to destroy the damaged part of a disc. [More...](#)

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Other treatments

There are several other ways of dealing with back pain and sciatica caused by a slipped disc. We haven't looked at the research for these in the same way that we have for other treatments. (To learn more, see Our method.) But we have included some information because people may want to know about them.

- [Artificial discs](#)
- [Coblation \(disc surgery using heat\)](#)

What will happen to me?

The good news is that in 9 out of 10 cases, the pain from a slipped disc gets better on its own.^[1] But getting better may take some time. It can be hard to wait if you're in a lot of pain and can't move normally.

Most people find that the pain gets a lot better after a few weeks. Two-thirds of people find that their slipped disc gets better within six months without surgery.^[1]

But if you're in a lot of pain you may be worried about how you're going to manage to get to work, do your job, or take care of your home and family. You may want to feel better more quickly. Or you may be worried that you could get **dependent** on the painkillers you need to take in order to carry on.

Being in constant pain can make you feel depressed or irritable. This can affect your relationships. You may feel tired and lose your appetite, and you may lose weight.^[17]

Surgery may help the pain, but a slipped disc usually gets better on its own.^{[1] [18]} Bear in mind that even though a slipped disc can hurt a lot, it's not usually harmful or dangerous.

If your back is hurting because of a slipped disc, you need to be careful not to make it worse. Avoid lifting heavy things and try not to strain or bend over. Try to keep your balance and move around with reasonable care.



Be careful when you move or lift heavy objects. And try to sit in a way that supports your back.

What about surgery?

Surgery can help some people recover from the pain of a slipped disc.^[1] But it is not right for everyone. There are risks and there can be problems later.

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It's hard to say exactly how much surgery is likely to help you. The results vary a lot between studies. That's because some studies looked at people with more severe back problems, and the researchers didn't always measure success in the same way. The different types of surgery may not all work as well as each other.

Here's what the research says about surgery for a slipped disc. ^[19]

- Between 78 in 100 and 95 in 100 people improved after surgery, but some of these people still had symptoms.
- People who didn't get a good result had problems like pain or difficulty moving. Some people weren't able to go back to work.

It's possible for a slipped disc to come back after surgery. Again, the numbers are different in different studies. ^[19]

- Between 3 in 100 and 12 in 100 people got another slipped disc after surgery.
- Almost all these people needed another operation.

You might have other treatments after surgery. For example, you might be offered physiotherapy, an exercise programme, or help to get you back to work.

If surgery helps you, your pain will get better more quickly. However, in the long term, it's not clear whether people who have surgery do better than people who have other treatments. ^[20]

To read more about surgery, see [What treatments work for a slipped disc?](#)

Will I get it again?

Even after your back pain and sciatica have completely cleared up, you may get these problems again. Sometimes it's because the damaged nerve root gets inflamed or irritated again, or the same disc gets damaged, or there are problems with another disc. This can happen whether you've had surgery or not.

Coping with pain

Some people seem to cope better with pain than others. This may be because they have support from friends or family, or because they have a more positive or cheerful personality. It depends on how they feel about their physical problems.

If you're in pain for a long time there are special clinics that can help you. If you learn ways to deal with pain more successfully, you have a chance to lead a more active life. Ask your doctor if there is a pain clinic in your area.

Slipped disc

Whatever the cause of your back pain, you may find that you feel depressed because you can't be as active as normal. Some people take time off work because of their back pain, but then find it difficult to return.

It's best to talk to your doctor if your back pain is making you feel down. He or she may be able to reassure you. You can also get advice from your doctor about how to take care of your back. Many doctors now advise that if you have back pain, the best thing you can do is to stay active.

Warning signs of something more serious

Slipped discs are not generally dangerous. But the same symptoms can occasionally be the sign of a more serious problem.^[13] To learn more, see [What are the symptoms of a slipped disc?](#)

Questions to ask your doctor

If you have bad back pain or sciatica, it's worth going to see your doctor. Back pain often clears up on its own after a short time.^[1] But your doctor may be able to tell you more about what the problem is and advise you about the best way to handle it.

Here are some questions you may want to ask your doctor.

If your doctor thinks you may have a slipped disc

- Is there any way you can be certain I have a slipped disc?
- Should I have an **MRI scan** or a **CT scan** ? If so, when?
- Are there any signs of complications?
- Is there a risk that I could have complications?
- Do I need to stay in bed or rest?
- Are there any activities that might make it worse?
- Is there anything that can help reduce the pain?
- How can I avoid getting back pain again?
- Are there any exercises that can make my back stronger?
- Should I drive?

If you've had a scan that shows you have a damaged disc

- Does the scan show how badly damaged the disc is?

Slipped disc

- Does the disc that's damaged in my spine match the symptoms I have?
- How can you be sure the slipped disc is causing my symptoms?

If your doctor suggests surgery

- What is surgery likely to do for me?
- What are the risks?
- How long will it take for me to recover?
- When will I be able to go back to work?
- Which kind of surgery do you recommend? Should I have the [standard operation](#) or would one of the newer techniques be better?
- If I don't have surgery, what other treatments are there?
- What else can I do to make my back feel better?

Treatments:

Spinal manipulation

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 spinal manipulation?](#)

This information is for people who have a slipped disc. It tells you about spinal manipulation, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

Probably. This treatment may help if you have back pain that's caused by a slipped disc. But we can't be certain, because the studies looking into it aren't very good.

There is a very small risk that manipulating your spine can make your back problem worse.

Slipped disc

What is it?

Spinal manipulation is when a health professional uses their hands to move parts of your backbone (also called your spine). You can have it done by a [physiotherapist](#), a [chiropractor](#), or an [osteopath](#).

The aim is to move the small joints between the bones (called vertebrae) in your spine. This may relieve pain, stiffness, and other symptoms.

If you have a slipped disc, the aim of spinal manipulation is to stop the damaged disc pressing on the nerve root. Your therapist may also try to relax any tight muscles.

If you have spinal manipulation, it's important to go to someone who has experience doing this treatment and who has been trained properly.

In the UK, all osteopaths, chiropractors, and NHS physiotherapists are registered. If you are considering private treatment for spinal manipulation, ask your doctor for advice about whom to see.

How can it help?

If you have back pain from a slipped disc, this treatment may help improve your symptoms. One study found that it improved back pain in about one third of people. ^[26]

Another study found that it worked better than [traction](#) (this is where you lie on a bed and a therapist uses weights on a pulley system to stretch your spine). ^[27] A third study found manipulation works better than treatment with heat. ^[28]

A small study also suggested that having manipulation along with [acupuncture](#) may help pain more than having manipulation on its own. But we need more research to confirm this. ^[29]

How does it work?

If the joints in your back aren't in the right position, you may get pain and stiffness. So by adjusting (manipulating) the bones in your spine, you may be able to get them into the right position.

If you have a slipped disc, manipulation that stops the disc pressing on the nerve root could help relieve pain.

Can it be harmful?

We didn't find much good evidence about the risks of having spinal manipulation. Some studies that look at risks are not clear about how often problems happen. ^[30]

About one half of the people who have spinal manipulation get minor side effects, such as discomfort, a headache, nausea, or dizziness. ^[31] Serious side effects seem to be

Slipped disc

rare, but there hasn't been enough good research to tell us exactly how often they happen. If you're going to have spinal manipulation, make sure you choose a trained therapist.

More severe side effects of spinal manipulation include:

- Fractures of the spine
- Paralysis (from damage to the nerves in your spinal cord)
- Strokes (because the vessels taking blood to the brain could become trapped).

One study has estimated that between 1 in 20,000 and 1 in 1,000,000 people may have a stroke after spinal manipulation.^[32] Because of these risks, some guidelines suggest that manipulation shouldn't be used for people who already have problems affecting their brain or nerves.^[33]

How good is the research on spinal manipulation?

We found several studies (called randomised controlled trials) that looked at spinal manipulation for back pain and sciatica caused by a slipped disc.^[26] ^[28] ^[34]

We found one review of research on the risks of spinal manipulation.^[31] But it included manipulation of the neck as well as the lower back, so it might not be a good source of information about the risks of spinal manipulation of the lower back.

The only other information about possible risks comes not from studies but from descriptions of problems in individual patients (doctors call these descriptions case reports).^[30] This type of information doesn't tell us how often a serious problem might happen.

Acupuncture

In this section

[Does it work?](#)

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[How does it work?](#)

[Can it be harmful?](#)

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

This information is for people who have a slipped disc. It tells you about acupuncture, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

We don't know if acupuncture helps with the pain caused by a slipped disc. There hasn't been enough research to tell us.

What is it?

Acupuncture is a traditional Chinese treatment. It's a type of complementary or alternative medicine. If you have acupuncture, a trained acupuncturist puts sterile needles into your skin.

Traditional acupuncturists believe that acupuncture improves the flow of energy around the body. Some modern doctors think that putting needles in the skin could encourage the release of natural chemicals that block pain and help you feel relaxed. ^[35] Another theory is that acupuncture might work a bit like talking therapy. Discussing your situation with an acupuncturist and relaxing while the needles are put in might reduce anxiety, or help you cope better with pain.

How can it help?

We don't know if acupuncture can help with pain or sciatica caused by a slipped disc. There hasn't been enough research to say for certain whether it works, or how it compares with other treatments. ^[36]

There is some research showing that acupuncture might help about half the people whose back pain isn't caused by a slipped disc. ^[37] However, in this study, 'pretend' acupuncture (where the acupuncturist avoids specific acupuncture points and only puts needles just below the skin) worked just as well as traditional Chinese acupuncture.

How does it work?

It's not clear how acupuncture might work. One theory is that it stimulates the release of natural chemicals in the body that block pain. These chemicals are called endorphins and enkephalins.

Can it be harmful?

We don't know whether acupuncture for slipped discs causes problems. There is no good research to tell us.

However, acupuncture is used for lots of other health conditions, and we did find some information on acupuncture for other uses.

- In one study, doctors and physiotherapists who used acupuncture to treat a variety of medical problems were asked if the treatment had ever caused a patient any harm. Out of 10,000 acupuncture treatments given, there wasn't a single case of serious harm. There were minor side effects, but these were fairly rare. For example, acupuncture caused bleeding in about 1 in every 30 treatments, and pain in about 1 in every 90 treatments. ^[38]
- Another study looked at 34,407 acupuncture treatments given by professional acupuncturists. None of the treatments caused any serious harm. Again, there were

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some minor side effects, such as bruising in about 1 in 60 treatments, pain in about 1 in 80 treatments, and bleeding in about 1 in 250 treatments. ^[39]

- There have been some reports of serious harm from acupuncture, such as injury to the nerves or lungs, and infections from dirty needles. These problems are very rare. ^[40]

How good is the research on acupuncture?

The research on acupuncture isn't good enough to come to any conclusions about whether or not it works to reduce pain for a slipped disc.

We found one study from China looking at people who had acupuncture as well as [spinal manipulation](#). ^[29] However, this study was quite small (with only 58 people), making its findings less reliable.

We also found one summary of the research (called a [systematic review](#)) that found one small study that compared people who had acupuncture with people who had imitation acupuncture. ^[36]

Another study compared a type of acupuncture called **electroacupuncture**, which passes an electric current through the needles, with the [nonsteroidal anti-inflammatory drug \(NSAID for short\)](#) diclofenac. But the study was small and some of the symptoms assessed in the study (such as buttock tenderness) may not be very common in people with a slipped disc. ^[41]

We found another study that involved more than 1,100 people. It looked at the effects of acupuncture on people who had back pain for a long time (but they did not have a slipped disc). ^[37]

Exercise therapy

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 exercise therapy?](#)

This information is for people who have a slipped disc. It tells you about exercise therapy, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

We don't really know if exercise therapy can help with the pain caused by a slipped disc. There hasn't been enough research to say one way or the other.

What is it?

If your back aches from a slipped disc, your doctor or a [physiotherapist](#) may suggest a programme of back exercises to help. Doctors sometimes call these programmes exercise therapy. They involve doing more than your normal activities.

You will do back exercises such as bending forwards and straightening your spine, stretching and strengthening exercises (such as sit-ups), and aerobic activity (such as walking or gentle running). You can do an exercise programme with a physiotherapist or at home.

The physiotherapist will work with you to draw up a plan that explains the types of exercises you should do, how the exercises can help, and how often you need to do them.

How can it help?

We don't know if exercise therapy can help with pain or sciatica caused by a slipped disc. Some studies have found that exercise therapy helps reduce pain and increase movement as much as some other treatments, such as standard physiotherapy, [traction](#), and [spinal manipulation](#).^{[28] [42]} But some of the studies aren't very good and we need more research to know whether or not exercise therapy works.

But we do know that exercise programmes can help people with most kinds of long-term (chronic) backache. The exercises reduce pain and let people move around more comfortably.

How does it work?

The idea is that an exercise programme will strengthen the muscles that support your back, improve your flexibility, and increase your stamina. This will help you develop a stronger and less painful back. It also seems that exercise programmes stop symptoms getting worse, which often happens when people are less active.

Can it be harmful?

We don't know for certain if following a programme of back exercises can be harmful, as studies don't look at this.

How good is the research on exercise therapy?

We didn't find any good studies that compared exercise therapy with no treatment for a slipped disc. But we did find some studies that compared exercise therapy with other treatments used for slipped disc, such as standard physiotherapy, [traction](#), [spinal manipulation](#), and [corsets](#).^{[28] [42]} More good studies are needed on this treatment.

Staying active

In this section

Slipped disc

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[What is it?](#)

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[How does it work?](#)

[Can it be harmful?](#)

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

This information is for people who have a slipped disc. It tells you about staying active, and looks at why doctors often recommend this approach to people with back pain. It is based on the best and most up-to-date research.

Does it work?

Staying active can be the last thing you feel like doing if you have bad back pain. And we don't know for certain whether moving around helps you recover more quickly from a slipped disc.^[43] But it won't make your back problem worse and it will probably make you feel better.

What is it?

Many doctors advise people with back pain to stay as active as they can. The idea is that you do your normal daily activities, including going to work, as much as possible. You should also avoid sitting still for long periods of time. Your doctor or your physiotherapist can give you more advice about this.

If you feel up to it, you may want to try something more than normal activities. No single exercise has been shown to help more than any other. But doctors often recommend brisk walking, swimming, or riding an exercise bike.

Whatever activities you choose to do, you need to be careful not to make the pain worse.

- Don't do any heavy lifting. That usually means don't lift anything heavier than 2.5 kilograms (5 pounds).^[21]
- Don't do any strenuous bending over or twisting. You may have to avoid leaning forwards too.

How can it help?

We're not sure if staying active can help if you have a slipped disc. We didn't find any good studies to tell us.^[21]

But we do know that staying active is better for most kinds of backache than staying in bed. It helps reduce pain and speed recovery.^[44]

Also, most doctors agree that being inactive for a long period is not good for your back or for your health in general. It can make your muscles weaker, and that can lead to more back problems.

Slipped disc

How does it work?

We don't really know why staying active should help if you have a slipped disc. But activities like going to work, climbing stairs, or going shopping help keep your body healthy in general.

Staying active may also help lift your mood and help you feel able to live more normally. That can make you less afraid of pain. ^[13]

If you don't stay active, your back muscles will get weak and your overall fitness will get worse. Doing some regular exercise that helps to strengthen your muscles may help to prevent back problems in the future. ^[8]

Can it be harmful?

Staying active is not likely to cause harm if you have a straightforward disc problem. It may hurt to move about, but it won't damage your back. Avoid doing anything that makes the pain feel a lot worse. Try to keep as mobile as possible, but don't overdo it.

If you have numbness, tingling, or weakness in your legs or you lose control over your bowels or bladder, this could be an emergency. You must get help straight away.

How good is the research on staying active?

We didn't find any good-quality studies (called **randomised controlled trials**) to show that staying active helps back pain or sciatica caused by a slipped disc.

We found one review of studies on treating sciatica caused by a slipped disc. The review did not find any good research on staying active. ^[43]

Massage

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 massage?](#)

This information is for people who have a slipped disc. It tells you about massage, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

We don't know whether massage helps pain caused by a slipped disc. There isn't enough good research to tell us.

Slipped disc

What is it?

Massage is one of the oldest methods of helping aches and pains. A therapist kneads and presses your skin, muscles, and tendons with his or her hands. Some therapists also use their forearms, elbows, or feet.

The goals of massage are to:

- Help relieve tension and pain
- Help you move more easily
- Help you relax
- Make you feel generally better about yourself.

How can it help?

Massage might help to relieve the pain caused by a slipped disc.^[45] But the only good study we found looked at massage combined with spinal manipulation, so it's hard to say how much pain relief was due to massage and how much was due to manipulation. More research is needed to know whether or not massage works for slipped disc.

How does it work?

Massage therapy is based on the belief that waste products can build up in muscles and make them stiff and sore. Massage aims to improve circulation to get rid of these waste products. It may also help the body make more of the chemicals that are natural painkillers. These chemicals are called endorphins .

Massage may also help by:

- Lowering your heart rate
- Relaxing your muscles
- Helping your joints move more easily
- Relieving stress.

But we don't know why massage should help if you have back pain because of a slipped disc.

Can it be harmful?

We didn't find any good-quality studies of this treatment, so it's hard to say for certain whether it can be harmful.

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There is a chance that massaging an area that is swollen and sore could make you feel more uncomfortable. But a gentle massage that doesn't involve turning or twisting the body isn't likely to be harmful.

It's best to be careful and be guided by your pain. Don't have a massage that hurts.

How good is the research on massage?

There isn't very much evidence that massage works for people with a slipped disc. We found just one good study that looked at the effects of massage on back pain caused by a slipped disc. ^[45]

Ice or heat

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 ice or heat?](#)

This information is for people who have a slipped disc. It tells you about ice and heat, treatments used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

We don't know whether applying ice or heat helps relieve pain caused by a slipped disc. There hasn't been enough good research to say whether or not it works.

What is it?

Some people put ice packs on their backs to help the pain. Other people use heat lamps, a warm bath, or a hot water bottle.

If you want to try this, you need to be careful not to burn or freeze your skin.

- Don't use heat or ice for more than 15 minutes at a time.
- Be careful not to put ice or strong heat directly onto your skin. Use a cloth or towel as a wrap.

A bag of frozen peas wrapped in a towel makes a good, reusable ice pack. Remember that they won't be safe to eat if they are thawed and refrozen.

How can it help?

We don't know whether heat or ice can help reduce back pain or sciatica (pain that runs through your buttock and down your leg) caused by a slipped disc. There isn't any good evidence one way or the other.

Slipped disc

How does it work?

Ice packs may reduce swelling ([inflammation](#)), which can be one of the reasons for back pain.

Putting heat on an ache can help blood flow in that area. For some injuries, this might help the healing process.

But it's not clear how heat or ice can help ease pain or sciatica that's caused by a slipped disc.

Can it be harmful?

We couldn't find any good-quality studies of these treatments, so we can't say whether there are any side effects.

It's possible to damage your skin if you use ice for too long. And you may burn yourself if you use too much heat. A leaking hot water bottle or tipped-over heat lamp could also cause accidental injuries.

How good is the research on ice or heat?

There isn't any good research on ice and heat treatment for people with a slipped disc.

We found one summary of the research (called a [systematic review](#)) that searched for studies on ice and heat. It didn't find any good-quality studies (called [randomised controlled trials](#)) comparing people using ice and heat on their backs with people who didn't have this treatment. ^[43]

Bed rest

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 bed rest?](#)

This information is for people who have a slipped disc. It tells you about bed rest, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

Staying in bed probably won't help the pain caused by your slipped disc and you're unlikely to get better any sooner. ^[46]

There's not much research on bed rest to treat a slipped disc. But studies of bed rest as a treatment for other types of low back pain tell us that it doesn't work and may even be harmful. Most doctors no longer recommend bed rest for back pain. ^[46]

Slipped disc

What is it?

If you have a slipped disc, you may be in a lot of pain. You lie down because this is the only position that makes your back hurt less. ^[44]

How can it help?

Bed rest probably won't help if you have sciatica caused by a slipped disc. Sciatica is pain that runs through your buttock and down your leg. In one study people who rested in bed didn't feel any better than people who stayed active. ^[46] Research on other types of low back pain has found it doesn't help. ^[47]

How does it work?

The theory is that lying flat helps reduce the pressure on the slipped disc. Therefore, the pressure that the disc is putting on nerves would also be reduced. Pressure on the nerves is what causes sciatica, so if that pressure is relieved, the ache of sciatica should be relieved too.

Can it be harmful?

There is so little evidence about bed rest for a slipped disc we can't say for certain whether it's harmful. But here are some things that other studies have found.

- If you stay in bed for just a couple of days, your joints can get stiff. That can make it harder and more painful for you to bend and stretch.
- If you stay in bed for longer than a few days, your muscles may get weaker and you will become less physically fit.
- If you stay in bed for a long time, your bones can get thinner and weaker, and it can even cause pressure sores and blood clots. ^[47]

These are all good reasons why it's best to keep bed rest to a minimum. When you can get up and move around, it's a good idea to do as much as your pain permits.

How good is the research on bed rest?

We found one good-quality study called a **randomised controlled trial**. This involved 183 people with sciatica bad enough to justify staying in bed. ^[46]

We also found a **review** of research studies on bed rest. The review didn't find any good studies comparing people who stayed in bed with those who did their normal activities. ^[46]

Traction

Slipped disc

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 traction?](#)

This information is for people who have a slipped disc. It tells you about traction, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

Probably not. There's no good evidence that having traction will help a slipped disc.

What is it?

Physiotherapists usually apply traction. The idea is to pull on the lower half of the body to gently stretch the spine.

If you have traction, you lie flat on your back. The physiotherapist holds onto your legs and pulls them to a stretched position for a few seconds at a time. Another way to do traction is with a system of weights and cables. They are attached with a harness and can apply traction for a longer period of time.

How can it help?

There's very little evidence that traction can help. Most of the research on traction has found that it doesn't help the symptoms of slipped disc. ^[48] ^[49]

How does it work?

The idea of traction is to pull on the lower half of the body to gently stretch the spine. This should increase the space between the vertebrae and make a little more room for the disc. That should relieve pressure on the nerve.

Can it be harmful?

The research we found did not report the side effects of traction. This treatment is unlikely to be harmful if done by a trained physiotherapist.

How good is the research on traction?

There has been quite a lot of research into the effects of traction in people with a slipped disc.

We found one summary of the research (called a **systematic review**) and one other study that looked at traction compared with no treatment or pretend traction (when the physiotherapist would apply only a small fraction of the weight used in real treatment).

^[48] ^[49]

Slipped disc

Many other studies have compared traction with other types of treatment for a slipped disc, such as spinal manipulation, exercise therapy, and massage. ^[34] ^[45] ^[50]

Corsets and braces

In this section

[Do they work?](#)

[What are they?](#)

This information is for people who have a slipped disc. It tells you about corsets and braces, treatments used for a slipped disc.

Do they work?

We haven't looked at the research on corsets and braces in the same detail we have for the other treatments we cover. (To learn more, see Our method.) But we're including information about these treatments because you may have questions about them.

What are they?

Corsets and braces are supportive garments made of stiff material. They fit tightly around your body. They help support your back and stop movements that might cause pain.

They can be heavy and hot to wear. If they're working the way they should, they stop you making movements that might strain your back, such as bending over.

Sometimes doctors will suggest a corset or brace as a way of preventing another slipped disc. But there isn't any good evidence that wearing a corset or brace can prevent a slipped disc. ^[1]

Transcutaneous electrical nerve stimulation (TENS)

In this section

[Does it work?](#)

[What is it?](#)

This information is for people who have a slipped disc. It tells you about transcutaneous electrical nerve stimulation (TENS), a treatment used for a slipped disc.

Does it work?

We haven't looked at the research on TENS in the same detail we have for the other treatments we cover. (To learn more, see Our method.) But we're including information about this treatment because you may be interested in it.

What is it?

A machine, usually called a TENS machine, has wires that can be attached to your skin with sticky pads. The machine sends pulses of low-current electricity through the wires. The pulses are so gentle that they're barely noticeable.

Slipped disc

The idea is that the electrical pulses will interfere with pain signals that are sent from your back towards your brain. This should relieve pain. A physiotherapist may offer a trial session with a TENS machine and, if it helps, you may be able to rent or buy one to use at home.

Painkillers

In this section

[Do they work?](#)

[What are they?](#)

[How can they help?](#)

[Can they be harmful?](#)

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

This information is for people who have a slipped disc. It tells you about painkillers, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Do they work?

You may find that painkillers help for the first few days if you have a slipped disc. That's when the pain is likely to be at its worst.

But we don't know if painkillers help in the longer term to improve back pain and sciatica brought on by a slipped disc. There hasn't been enough good research to tell us either way.

What are they?

There are several different kinds of medicines that kill pain. Here is some information about the most common ones.

- Your doctor may suggest paracetamol. This is a very common painkiller. You can get it from a pharmacy.
- You doctor may give you a prescription for paracetamol combined with a stronger painkiller. Doctors call these strong painkillers opioids. One combination painkiller is co-codamol, which contains paracetamol and codeine (brand names include Kapake and Solpadol).
- Some combination painkillers can be sold by a pharmacist without a doctor's prescription. These have smaller quantities of opioid painkiller than is contained in those available on prescription. Common brands include Solpadeine and Paracodol, which both contain a combination of paracetamol and codeine.
- Doctors think it's better to combine drugs in this way than to increase the dose of a single drug. Higher doses tend to give you more side effects.
- Doctors will sometimes prescribe a strong opioid such as tramadol or morphine, although they are usually only prescribed for a few days.

Slipped disc

- Painkillers called [nonsteroidal anti-inflammatory drugs \(NSAIDs\)](#) have also been tried as a treatment for slipped discs, but these drugs don't really help with pain from a slipped disc.

How can they help?

There haven't been any good studies on painkillers as a treatment for a slipped disc. But studies looking at all types of long-term lower back pain have shown that painkillers are likely to help backache. ^[51] ^[52] Taking them for up to one week might help. ^[8]

Can they be harmful?

We didn't find any good-quality studies that looked at painkillers used to treat pain caused by a slipped disc, so we didn't find evidence of side effects.

But here's what we know about the side effects of painkillers from other research.

- Paracetamol is safe if you follow the instructions on the package. If you take the right dose, it shouldn't irritate your stomach as some painkillers can.
- Taking an overdose of paracetamol can damage your **liver** so badly that you can die. If you think you've taken too much you should see your doctor or go to hospital immediately.
- Strong painkillers (opioids), such as codeine, can cause nausea, vomiting, drowsiness, and constipation. This happens to about one half of the people who take them.
- If you take opioids regularly, you're likely to begin to need them in order to feel well (you can get **dependent** on them). This means if you stop taking them you get **withdrawal symptoms**. Also, you can get used to them (develop tolerance to them), which means you can start to need higher and higher doses to get the same effect.
- Taking a mixture of different painkillers (apart from combination tablets) can make side effects even worse. ^[53]
- To find out more about the side effects of NSAIDs like ibuprofen, see [Nonsteroidal anti-inflammatory drugs \(NSAIDs\)](#).

Very rarely, breastfeeding babies can get serious problems if their mother is taking codeine. ^[54] There isn't a problem for most mothers, but a small minority of women absorb codeine much faster than normal. This means more of the drug gets into their breast milk, which can cause side effects for the baby. If your baby is sick, reluctant to feed, or sleeps more than usual, stop taking codeine and see your doctor straight away. If you become very sleepy yourself, it's also a good idea to talk to your doctor.

How good is the research on painkillers?

We didn't find much good research on painkillers as a treatment for lower back pain caused by a slipped disc.

But we do know that painkillers can help with other types of lower back pain. You may want to read about evidence for [using painkillers as a treatment for other kinds of back pain](#) .

Antidepressants

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 antidepressants?](#)

This information is for people who have a slipped disc. It tells you about antidepressants, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Do they work?

We don't know if antidepressants can help you with pain caused by a slipped disc. And we don't know whether these drugs can help with the depression you may get if you're in a lot of pain. There isn't any evidence either way. We do know that some antidepressants have serious side effects.

What are they?

Antidepressants are drugs that are usually used to treat depression. Researchers think that low doses of antidepressants can help reduce back pain. Doctors sometimes prescribe them to help people with long-term back pain.

The antidepressants that doctors commonly prescribe for bad back pain are from a group known as tricyclic antidepressants. These drugs have been around for quite some time. Doctors tend to prescribe these using the drug name rather than a brand name. Common examples are:

- Amitriptyline
- Desipramine
- Nortriptyline
- Imipramine
- Doxepin.

Slipped disc

Newer antidepressants have also been prescribed for back pain, even though we don't have research evidence to prove that they help. These drugs, called **selective serotonin reuptake inhibitors**, or SSRIs, include paroxetine and fluoxetine.

How can they help?

We don't know if antidepressants can help if you have back pain that's caused by a slipped disc. There isn't enough good research to say.

How do they work?

There are many antidepressants, and they work in different ways. But they all change the levels of certain chemicals in your brain.

Doctors think that antidepressants can relieve pain, but it is not clear how they might work in the body to do this.

Can they be harmful?

We didn't find any good-quality studies of these drugs used to treat low back pain that's caused by a slipped disc.

But we know that antidepressants can have several side effects. They might make you constipated, feel sick, or vomit, among other things.^[55] Antidepressants are taken at a lower dose when used for back pain than when used for depression, so there may be fewer side effects.

Self-harm and suicide

Research has found that children, teenagers, and young adults taking antidepressants of all kinds are more likely to think about suicide or try to harm themselves.^[56]

The risk of suicidal thoughts is highest if you're under 18. Among people under 18 taking an antidepressant, an extra 14 in 1,000 thought about suicide.^[56]

The researchers also found that there's a risk for young adults up to the age of 24.^[56] But their risk wasn't as big as the risk for people under 18. An extra 5 in 1,000 people between the ages of 18 and 24 thought about suicide.

The research doesn't seem to show an increased risk of suicidal thoughts or self-harm for people over the age of 24. But doctors and carers are advised to keep a careful check on anyone taking antidepressants for signs of suicidal thoughts. You are more likely to get these thoughts in the early stages of your treatment, or if the dose of the antidepressant you're taking is changed. You may also be at risk if you have had thoughts about harming or killing yourself before.^[57]

If you are taking antidepressants and are worried about any thoughts or feelings you have, see your doctor straight away.

How good is the research on antidepressants?

We didn't find enough good-quality research to show whether or not taking antidepressants helps the pain caused by a slipped disc.

Infliximab

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

This information is for people who have a slipped disc. It tells you about infliximab, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

We're not sure. There hasn't been enough good research to say whether or not infliximab works for people with a slipped disc.

What is it?

Infliximab is a drug that is used to treat symptoms caused by swelling. It works by affecting how your immune system works. It is currently used to treat rheumatoid arthritis and Crohn's disease. The brand name for infliximab is Remicade.

Infliximab is given as a drip into your vein (also called an IV or intravenous infusion). It is still being studied as a possible treatment for pain caused by a slipped disc. In the one study that we found, infliximab was given just once. Only people who were suitable for surgery were given this treatment. ^[58]

How can it help?

We're not sure that it can. In the one study we found, infliximab did not help control the pain caused by a slipped disc. ^[58]

How does it work?

Infliximab stops a chemical called TNF (or tumour necrosis factor) working. TNF is found in the blood. Scientists think that TNF makes your immune system attack the lining of your joints. This causes swelling and pain. So, in theory, infliximab should help to reduce pain and swelling in the joints.

Can it be harmful?

The study we found did not report any side effects in the people treated with infliximab. ^[58] But studies that have looked at the effects of infliximab in people with rheumatoid

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arthritis have found that it can cause chest infections, headaches, diarrhoea, and stomach pain.

Infliximab and other, similar, drugs (called anti-TNF drugs) may slightly increase the risk of some kinds of cancer, including lymphoma and leukaemia.^[59] The increased risk is probably very small. In the US, there have been 48 reports of cancer in children and teenagers taking anti-TNF drugs, and 147 cases of leukaemia in both adults and children. That's out of many thousands of people who've taken these medicines. Most people were also taking other drugs that affected their immune system, so it's not clear how much of a part anti-TNF drugs played.

How good is the research on infliximab?

We found very little research on infliximab for a slipped disc. One study looked at 41 people who had sciatica caused by a slipped disc.^[58] All the people in the study were thinking about having surgery. Some people in the study were treated with infliximab while the others were given a dummy treatment (a **placebo**). Infliximab made no difference to people's leg pain, back pain, sick leave, or the need for surgery.

Muscle relaxants

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

This information is for people who have a slipped disc. It tells you about muscle relaxants, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Do they work?

We don't know. There hasn't been enough good-quality research on muscle relaxants for pain caused by a slipped disc. Studies of people with all kinds of back pain show they work, but they do have side effects.

What are they?

Muscle relaxants are drugs that relax your muscles. They often make you feel calmer. Doctors call this a sedative effect.

Doctors sometimes prescribe these drugs for people with severe back pain, but usually only for a short time. The aim is to relieve pain caused by tight muscles. Because these drugs help your muscles, they should make you feel more comfortable.^[21] Sometimes doctors give patients these drugs along with [painkillers](#).

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The muscle relaxant that doctors usually prescribe is called diazepam (it is usually prescribed using the drug name rather than the brand name). Other muscle relaxants (with brand names) include:

- Baclofen (Lioresal)
- Dantrolene (Dantrium)
- Lorazepam (Ativan)
- Tizanidine (Zanaflex).

How can they help?

We don't know if they can help if you have pain caused by a slipped disc. But they have been shown to help with pain and tight muscles in patients with other kinds of low back pain.

How do they work?

Drugs that relax muscles don't act directly on the muscles. They usually work by blocking nerve signals from the brain that make your muscles tighten up.

Doctors think that because these drugs relax muscles, they also reduce any pain that might be caused by tightness (spasms) or tension in the muscles of the back. You can get this kind of pain if you have a slipped disc.

When your back hurts, you may try to avoid pain by being cautious about how you move. This can actually give you extra tension in your back. Also, limiting your movements can make your back feel more uncomfortable, sore, and stiff. Doctors think that muscle relaxants help this because they make you feel more relaxed and less tense.

Can they be harmful?

We didn't find any good-quality studies of muscle relaxants as a treatment for pain caused by a slipped disc, so we didn't find any evidence about whether they can be harmful. But we know that these drugs can cause side effects.

They can make you feel sick, dizzy, or drowsy.^[60] This happened after just one week of treatment in up to 70 in 100 people in the studies we have looked at. You may not be able to drive if you're taking these drugs and they make you drowsy.

Some muscle relaxants can cause unpleasant side effects when you stop taking them. These are called **withdrawal symptoms**. Baclofen, diazepam, and lorazepam can all cause withdrawal symptoms. Your doctor will help you cut down slowly when you stop taking them.^[61]

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Dantrolene and tizanidine can both damage your liver. ^[61] If you take them, you'll need tests to make sure your liver is still working properly. See your doctor if you get flu-symptoms, feel sick, feel unusually tired, don't feel like eating, or get a yellow tinge to your skin or eyes. These could be signs that you have liver problems.

Tizanidine reacts badly to other common medicines, including some antibiotics. Always tell your doctor about any other medicines you are taking. ^[62]

For these reasons, doctors normally prescribe these drugs for only a few days. Doctors' guidelines say they should be used only for people who have a lot of pain caused by tight muscles.

How good is the research on muscle relaxants?

We didn't find any good-quality studies of muscle relaxants for pain caused by a slipped disc.

Steroids injected into the spine

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[How good is the research on steroids injected into the spine?](#)

This information is for people who have a slipped disc. It tells you about steroids injected into the spine, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Do they work?

Probably not. Having a steroid injection in your back is unlikely to help with pain caused by a slipped disc. But more research is needed before we can be certain.

What are they?

Doctors inject a kind of steroid into the spine to reduce swelling (inflammation). This helps with back pain and sciatica (pain that runs from one buttock and into one of your legs). Doctors call these **epidural steroid injections**.

- Steroids are drugs that reduce swelling (inflammation).
- You'll probably be given these injections by a specially trained doctor. This may be an anaesthetist or another type of medical specialist.
- If you have pain in your lower back that's caused by a slipped disc, doctors inject these drugs into the area around your spinal cord. Doctors call this area the 'epidural space'.

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These drugs are not the same type of steroids used by some athletes and bodybuilders. (Those are called anabolic steroids.) The drugs doctors use to treat back pain caused by a slipped disc are a direct copy of chemicals (corticosteroids) that our bodies produce naturally to deal with inflammation.

Steroids (and some brand names) used for a slipped disc include:

- Methylprednisolone (Depo-Medrone)
- Triamcinolone (Kenalog).

You may also have a **local anaesthetic** in the same injection.

The drugs are injected directly into the area around your spinal cord rather than into your bloodstream. This means there's less chance of the drugs affecting other parts of your body, so you should get fewer side effects.

To read more, see [More about steroids injected into the spine](#) .

How can they help?

We don't know if these injections can help. Different studies say different things.

- Some studies suggest that steroid injections may help with back pain caused by a slipped disc, at least in the short term. ^[43] ^[63] ^[64] ^[65]
- But other studies have found the injections make no difference. ^[66] ^[67] ^[68]

In one study, standard surgery ([discectomy](#)) worked better than steroid injections at first. But there was no difference between people who had one of these treatments after two to three years. ^[69]

How do they work?

If you have a slipped disc that's pressing on a nerve, you can get swelling around the nerve. That puts pressure on the nerve, which can cause pain.

Doctors think that these medicines may work because they affect chemicals in the body that cause inflammation. They keep those chemicals from causing inflammation, and that helps reduce pain.

Can they be harmful?

In one study, about 1 in 20 people had headaches or found that their sciatica got worse for a while soon after an injection of steroids into the spine. But these problems went away. ^[43]

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Serious side effects are rare. A very small number of people get a kind of infection called an epidural abscess.

How good is the research on steroids injected into the spine?

There have been several studies on steroid injections in the spine for slipped disc. But they still don't provide a clear answer about whether this treatment works. ^[43] ^[63] ^[64] ^[65] ^[66] ^[67] ^[68]

We also found some studies on adding steroid injections to other treatments, ^[66] ^[70] and another study comparing steroid injections with standard surgery (discectomy). ^[69]

Nonsteroidal anti-inflammatory drugs (NSAIDs)

In this section

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

This information is for people who have a slipped disc. It tells you about nonsteroidal anti-inflammatory drugs (NSAIDs), a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Do they work?

Probably not. If you have pain caused by a slipped disc, nonsteroidal anti-inflammatory drugs (NSAIDs) are unlikely to help your symptoms.

What are they?

NSAIDs are painkillers. They also help reduce inflammation.

There are many different NSAIDs.

Some common NSAIDs (and their brand names) are:

- Diclofenac (Voltarol)
- Ibuprofen (Nurofen)
- Ketoprofen (Oruvail, Orudis)
- Nabumetone (Relifex)
- Naproxen (Synflex, Naprosyn).

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You need a prescription for most of these drugs. But you can buy some, like ibuprofen, over the counter at pharmacies and supermarkets.

Two other NSAIDs, indometacin and phenylbutazone, were tested as treatments for pain caused by a slipped disc. But both are more likely to cause side effects than other NSAIDs, so they are not usually prescribed to treat a slipped disc.

COX-2 inhibitors

Some newer NSAIDs are called COX-2 inhibitors. These may cause less damage to the stomach than the older NSAIDs. But researchers don't know for certain.^[71]

How can they help?

NSAIDs probably won't help if you have back pain or sciatica caused by a slipped disc. Sciatica is pain that runs through your buttock and down your leg. In studies, people who took NSAIDs didn't feel any better than people who took a dummy treatment (a placebo).^{[43] [41]}

How do they work?

NSAIDs don't seem to work for the pain caused by a slipped disc. They normally work for other conditions by blocking the chemicals that send pain signals to the brain. They also stop the release of some of the chemicals that cause inflammation.

Can they be harmful?

Studies of people taking NSAIDs for pain caused by their slipped disc do not look at side effects. But we know from research on other medical conditions that NSAIDs can cause stomach problems, especially if you take high doses for a long time. This is a particular problem in people aged over 65.^[72] You may get:

- Indigestion
- Nausea
- A stomach ulcer.

These problems might be less common with COX-2 inhibitors, but the research hasn't shown this for certain.^[71] If you've ever had a stomach ulcer, you shouldn't take NSAIDs.

Taking high doses of some NSAIDs every day for a long time can increase your risk of a heart attack or stroke. This isn't likely to be a problem if you're taking an NSAID for a short time to treat pain. To learn more, see [Warnings about side effects of NSAIDs](#).

People who have heart problems shouldn't take diclofenac.^[73]

How good is the research on nonsteroidal anti-inflammatory drugs?

We found one summary of the research (called a [systematic review](#)), which looked at three studies of [nonsteroidal anti-inflammatory drugs \(NSAIDs\)](#) for pain caused by slipped disc.^[43]

Another small study compared the effects of the NSAID diclofenac with acupuncture.^[41]

Chemonucleolysis

In this section

[Does it work?](#)

[What is it?](#)

This information is for people who have a slipped disc. It tells you about chemonucleolysis, a treatment used for a slipped disc.

Does it work?

We haven't looked at the research on chemonucleolysis in the same detail we have for the other treatments we cover. (To learn more, see [Our method](#).) But we're including information about it here to answer questions you might have.

What is it?

In chemonucleolysis, the doctor injects a chemical called chymopapain into the damaged disc. The idea is that this causes the disc to shrink so that it no longer presses on the nerves in the back. The doctor gives the injection using [X-rays](#) to guide the needle.

Some research has found that chemonucleolysis works better than a dummy treatment (a [placebo](#)), but doesn't work as well as surgery for a slipped disc. The advantage it has over surgery is that you don't have to have an operation.^[82]

Discectomy

In this section

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

This information is for people who have a slipped disc. It tells you about the standard surgery used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

Yes. This operation gives fast relief for most people who have low back pain and sciatica because of a slipped disc.

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But surgery is not for everyone. It works well only for certain problems. ^[8]

Between 2 in 100 and 3 in 100 people who have this surgery need a repeat operation within two years. ^[83]

People who have other kinds of treatment (not surgery) for a slipped disc also tend to get better. It just takes longer. ^[84]

What is it?

Doctors call this operation a standard or open discectomy. The goal is to remove the damaged or bulging part of a slipped disc. This should relieve pressure on the nerves in this part of the back. It's the most common operation for treating slipped discs. ^[82]

No matter what kind of operation you have, it's important that your doctor makes certain that you'll truly benefit from surgery. The following things need to happen.

- Based on your symptoms and a physical examination, as well as tests of movement and strength, your doctor needs to diagnose a slipped disc.
- You'll need to have an [MRI scan](#) to be certain that there really is damage to a disc.
- Different discs cause different problems when they're damaged. You and your doctor need to be certain that the problems you're having are caused by the disc that your scan shows is damaged.

You need a [general anaesthetic](#) for this operation, and you usually have to stay in hospital for one or two nights. ^[82]

To read more, see [More about standard surgery](#) .

How can it help?

For some people, surgery can bring rapid relief from back pain and sciatica (pain that runs through your buttock and down your leg) that are caused by a slipped disc. ^[83] ^[82]

One study found that after one year, more people who had surgery were completely satisfied with the results than people who had other treatments such as physiotherapy. ^[86] About two-thirds of people who had surgery said they felt good, but only one third of those who didn't have surgery felt this way.

Four and 10 years on, people who had surgery didn't feel any better than those who had other types of treatment. About one half of people in both groups rated their improvement as good.

There has also been research comparing standard surgery with [surgery using a microscope](#) . It found that both types of surgery worked equally well. ^[86] ^[87] ^[88] In one

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study, eight out of 10 people who had either type of surgery said they had made a good recovery after one year.^[89] But it may take longer to recover from standard surgery than from surgery using a microscope.

How does it work?

The goal of surgery is to remove the part of the disc that is bulging out. Doing this relieves pressure on the nerves in your back. Once the damaged disc is no longer pressing on the nerves, the back pain and sciatica should get better or even disappear.

It's good to remember that many people have damaged discs that never cause symptoms. If you have a slipped disc like this, treating it won't cure your back pain. So for the surgery to be successful, you have to be certain which disc is causing the problems and needs treatment.

Can it be harmful?

Not all the studies we looked at gave information about complications.^[84] But, like all surgery, this operation has some risks. These include the risk of:

- Bleeding
- Infection
- An unexpected reaction to the anaesthetic.

There is a chance that your pain may come back. You may need another operation on the same disc. About 3 in 100 people who have this type of surgery need another operation for slipped disc within two years.^[83] Older studies found that about 10 in 100 people need a second operation.^[90] This may indicate that surgeons are getting better at doing this operation.

Scar tissue is a normal result of surgery, but it can make repeat operations more difficult.^[18]

To read more, see [Things that can go wrong when you have standard surgery for a slipped disc](#).

How good is the research on discectomy?

There's quite good research on standard surgery for a slipped disc. We found two studies that compared standard surgery with non-surgical treatment for slipped disc.^[83] ^[86]

Other studies have compared standard surgery with surgery using a microscope.^[86] ^[87]
^[88]

Microdiscectomy (surgery using a microscope)

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 microdiscectomy \(surgery using a microscope\)?](#)

This information is for people who have a slipped disc. It tells you about surgery using a microscope, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

Yes. This kind of operation works as well as [standard surgery](#) to treat low back pain that's caused by a slipped disc. ^[82] Also, people who have this kind of surgery recover more quickly. ^[3]

But surgery isn't for everyone. It works well only for certain kinds of problems. And you may need to have another operation if the problem comes back. ^[91]

Surgeons who do this kind of surgery need special training and equipment. Your local hospital may not have the equipment or trained staff to do this kind of operation. ^[93]

What is it?

Like standard surgery, this operation aims to remove damaged parts of a disc in the spine. This relieves pressure on nerves in the back. Doctors call this kind of operation a **microdiscectomy**.

Whichever kind of operation you have, it's important that your doctor makes certain that you'll truly be helped by surgery.

- Your doctor needs to diagnose a slipped disc. You'll have an **MRI scan** to be certain that there is damage to a disc.
- Different discs cause different problems when they're damaged. You and your doctor need to be certain that the problems you're having are caused by the disc that your scan shows is damaged.

The main difference between this kind of operation and standard surgery is that the surgeon uses a special microscope to see the part of your back being operated on. This means that the surgeon can make a smaller cut to get to the disc. The smaller opening will heal more quickly than a large one. ^[18]

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The surgeon may put a thin telescope (an arthroscope) into your backbone. It works like a camera and sends pictures to a video camera. This lets the surgeon see inside your spine. The name for this is **video-assisted arthroscopic microdiscectomy**.

You don't have to stay in hospital overnight for this operation.

How can it help?

Surgery done with a microscope is just as good as standard surgery for treating pain caused by a slipped disc. People who have surgery with a microscope are just as likely to feel better and have less back pain as people having standard surgery. ^[82] ^[3] ^[94] ^[95]
^[88]

Patients whose surgeons use a microscope, or a microscope plus an arthroscope and video, don't have to stay overnight in hospital, and they use fewer painkillers. Also, they take about one half as much time to get back to their normal activities (including going back to work) as people who have standard surgery to repair a disc. ^[3]

We don't know how well it works compared with [surgery through a small hole in the skin](#). Different studies say different things. ^[96] ^[97]

Surgery done with a microscope seems to reduce pain more than non-surgical treatments, such as physical therapy, at least in the short-term. ^[98] ^[99] One study found that, after six weeks, people who had surgery had less pain than those who had physical therapy. But after three months and after two years, both groups reported the same level of pain. ^[98]

How does it work?

If you have lower back pain or sciatica (pain that runs through your buttock and down your leg) caused by a slipped disc, it means that part of one of your discs is pressing on nerves coming from your spine. So removing the parts of the disc that are pressing on the nerves should help your symptoms.

This kind of surgery is better than standard surgery in one main way: the surgeon has to make only a small cut. So it should heal faster and you won't have to stay in hospital overnight. ^[18]

Can it be harmful?

Like all kinds of surgery, this operation carries some risks.

Some problems might be:

- Excess bleeding
- An infection

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- An unexpected reaction to the anaesthetic .

If you are obese , have high blood pressure , or have diabetes , it's more likely that you could have problems after surgery. ^[91]

Some people end up needing a second operation for a slipped disc. This might happen if the first operation doesn't work, or if your slipped disc comes back. It's hard to say how likely you are to need another operation. The results vary between studies, and not all studies give much information about second operations. Roughly, in the studies of surgery using a microscope, between 2 in 100 and 7 in 100 people had another operation within four years. ^[91]

Scar tissue is a normal result of surgery, but it can make repeat operations more difficult. ^[18]

To read more, see [More about the risks of disc surgery using a microscope](#) .

How good is the research on microdiscectomy (surgery using a microscope)?

We found two studies comparing this kind of operation with treatments that don't involve surgery. ^[98] ^[99]

We also found studies comparing this treatment with [standard surgery](#) .

Surgery with a microscope compared with standard surgery

We found six high-quality studies (called randomised controlled trials) that compared this operation with standard surgery for a slipped disc. ^[82] ^[88] ^[87]

Surgery with a microscope and camera

We found one study on surgery using a microscope and camera. The study involved 60 people. They either had surgery in which the doctor used a microscope and camera (video arthroscopy) or they had standard surgery. ^[100]

Surgery with a microscope compared with surgery through a small hole in the skin

We found one summary of research (called a systematic review) that looked at the results of two studies. ^[82] The studies compared disc surgery using a microscope with [surgery through a small hole in the skin](#) .

Percutaneous discectomy

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[How does it work?](#)

Slipped disc

[Can it be harmful?](#)

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

This information is for people who have a slipped disc. It tells you about surgery through a small hole in the skin, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

We don't know. There isn't much evidence about this type of surgery. And different studies had different results. More research is needed to know whether or not this type of surgery works.

We do know that people who have this kind of surgery have a high chance of needing to have the same operation again.

This surgery is not a good choice if you have pain because of a badly bulging slipped disc or if parts of the disc have broken off. To read more about this, see [What is a slipped disc?](#)

What is it?

Surgeons use this kind of operation to remove damaged parts of a disc that has slipped and is causing back pain and sciatica. Doctors call this operation **automated percutaneous discectomy**.

Before you have any kind of surgery, it's important that your surgeon is certain that it will really help you.

- Your surgeon needs to be certain that you have a slipped disc. You should have an **MRI scan** to find out.
- If your scan shows a damaged disc, you and your doctor need to be certain that this disc is causing your symptoms.

When a surgeon does this operation, he or she makes one or more very small holes in the skin on your back. This kind of surgery only takes about 15 minutes. Because the surgeon doesn't need to make a big opening, you can recover more quickly than if you have [standard surgery](#). You should also have less pain and the small opening should heal faster.

If you have this kind of surgery, you need only a **local anaesthetic**, not a **general anaesthetic**. You may also be given a **sedative** to help you relax. You don't need to stay in hospital overnight.

The National Institute for Health and Care Excellence (NICE), the government body that decides which treatments should be available on the NHS, says that although this type of surgery seems to be safe, there are still uncertainties about how well it works. If your doctor suggests this operation, he or she should give you clear, written information about the benefits and possible risks of this type of surgery. ^[101]

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During the operation

This is what happens during the operation. ^[91]

- The surgeon makes a small puncture hole in the skin to one side of your backbone. He or she uses a special probe to do this.
- The probe is about as big as a large needle used to give injections. The tip of the probe is motorised and can turn like a drill.
- The surgeon knows where to put the probe into the damaged disc, because **X-ray pictures** show exactly where the problem is.
- The motorised tip of the probe is like a screw with sharp threads. The surgeon uses this to cut away the disc material.
- The damaged parts of the disc are sucked out through the centre of the probe.

How can it help?

We don't know for certain that it can help. Different studies say different things. ^[82]

- One study compared this kind of surgery with [surgery using a microscope](#) . This study was stopped early because people having surgery through a small opening in the skin were obviously doing much worse than those having surgery done with a microscope. ^[96]
- Another small study also compared this kind of operation with surgery using a microscope. It found that after two years, about 8 in 10 patients no longer had sciatica, no matter what type of surgery they had. ^[97]
- The same study found that more people who had surgery through a small hole in the skin were satisfied with the results than people who had surgery done with a microscope. It also found that people who had this kind of operation recovered faster.

How does it work?

This kind of operation does the same thing as other kinds of surgery for a slipped disc. It lets the doctor take out the part of a disc that has been squeezed out of place and that's pressing on a nerve and causing pain. Once the damaged part is removed, the symptoms should improve or even disappear.

Can it be harmful?

Some people end up needing a second operation for a slipped disc. This might happen if the first operation doesn't work, or if your slipped disc comes back. It's hard to say how likely you are to need another operation. The results vary a lot between studies. ^[20]

- In one small study, 65 in 100 people needed another operation within six months. ^[96]
- In another small study, 15 in 100 people needed another operation within six months. ^[97]

You might be more likely to need a second operation on the same disc if you have surgery through a small hole in the skin, compared with other kinds of surgery. ^[91] This could be because the surgeon can't see the disc directly, so it's harder to make sure the problem has been fixed.

Any time you have surgery, there is a risk of problems. Even though the surgeon makes a very small hole in the skin, there is still a small risk of infection, bleeding, and nerve damage. ^[91]

Some problems may be more likely to happen with this method than with others. ^[91] For example, the disc the surgeon operates on may get **inflamed**. This is called **discitis**.

- This happens to between 1 and 2 people out of every 100 who have this kind of surgery or standard surgery.
- About one half as many people who have the kind of surgery where the surgeon uses a microscope have this problem.

How good is the research on percutaneous discectomy?

We didn't find any good-quality research that compared this kind of surgery with treatments that don't include surgery.

But there has been some research comparing this kind of surgery with [surgery using a microscope](#).

We found two summaries of research studies (called **systematic reviews**). ^[82] ^[91] Between them these reviews found three small studies.

Laser surgery

In this section

[Does it work?](#)

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Slipped disc

[How does it work?](#)

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

This information is for people who have a slipped disc. It tells you about laser surgery, a treatment used for a slipped disc. It is based on the best and most up-to-date research.

Does it work?

We don't know. Using a **laser** to treat back pain caused by a slipped disc is one of the newest surgical techniques. There isn't very much research on it yet.

The National Institute for Health and Care Excellence (NICE), which advises the NHS on new treatments, has carried out a detailed study of laser surgery for disc problems. NICE says that the surgery can be used as a treatment for disc problems, but patients must be told that doctors are still uncertain about how well the treatment works and how safe it is.

All patients who have laser surgery should be given written information about the procedure and its risks. NICE also says that surgeons who perform laser surgery should carefully record the results so that more information becomes available for researchers.

[102]

What is it?

This treatment is a kind of surgery that is usually performed by a specialist back surgeon. It is carried out if the outer cover of the disc is stretched, but not if it has burst.

The surgeon puts a special needle into your spine and into the damaged disc. A wire that carries the laser is inserted through the needle. The laser produces very high-energy light that destroys the jelly-like centre of the disc that is damaged and pressing on nerves in your back. The aim is to make the disc into a more normal shape. [102]

If you have laser surgery, you'll have a **general anaesthetic** to put you to sleep during the operation. But you probably won't have to stay in hospital overnight.

The surgeon might put a flexible telescope (an arthroscope) into your back at the same time that the laser is put in. The telescope helps the surgeon direct the laser to the right place. [103]

Because this operation is done with a laser, there isn't a big cut like the kind you would have with ordinary surgery. This should mean that you get less bleeding, are less likely to get an infection, and will recover more quickly. But we can't be certain that laser surgery has these benefits. There haven't been any good studies to find out. [104]

Whatever operation you have, it's important that your doctor is certain that you're going to be helped by surgery.

- Your surgeon needs to diagnose a slipped disc. You'll need to have an **MRI scan** to be certain that there really is damage to a disc.

Slipped disc

- Different discs cause different problems when they're damaged. You and your doctor need to be certain that the problems you're having are being caused by the disc that your scan shows is damaged.

How can it help?

We don't know if it can help. We haven't found any good-quality studies ([randomised controlled trials](#)) to show whether it works or not. [\[104\]](#) [\[105\]](#) [\[91\]](#)

The only evidence we found was from [observational studies](#) , which suggest that laser disc surgery can help relieve pain. [\[106\]](#) In observational 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.

How does it work?

Laser surgery tries to do the same thing that other kinds of disc surgeries do. It removes the part of a disc that's bulging out of place.

A laser can be aimed precisely at damaged disc material and can destroy it. This should relieve the pressure on the nerves in your spine. It is this pressure that causes lower back pain and sciatica (pain that goes through your buttock and down your leg).

Can it be harmful?

We don't know whether laser surgery for a slipped disc is harmful. We didn't find any high-quality studies to tell us. Some doctors think that laser surgery can cause the disc to become swollen ([inflamed](#)). [\[103\]](#)

NICE looked at one study. [\[102\]](#) This found that 7 in every 100 people who had the operation felt numbness, tingling, or pain afterwards because of damage to nerves.

It's possible that laser surgery might have some other risks. These could include nerve damage and numbness. [\[104\]](#) But we can't say for certain.

How good is the research on laser surgery?

Laser surgery is a newer treatment, so there hasn't been much research on it.

We found four summaries of the research (called [systematic reviews](#)) that searched for studies on laser surgery. These reviews didn't find any good-quality studies (called [randomised controlled trials](#)) comparing people who had laser surgery with people who didn't have this treatment. [\[104\]](#) [\[91\]](#) [\[82\]](#) [\[106\]](#)

However, one summary also looked at observational studies, which are a less reliable type of research. [\[106\]](#)

Slipped disc

The National Institute for Health and Care Excellence (NICE), which advises the NHS on new treatments, carried out a detailed review of laser surgery and found one study that included 348 people. After one year, 6 in every 10 people who had the surgery said the results were good or excellent. ^[102] But NICE said this was not a good-quality study because the success of the surgery wasn't monitored for very long.

Artificial discs

In this section

[Do they work?](#)

[What are they?](#)

[How can they help?](#)

[Can they be harmful?](#)

This information is for people who have a slipped disc. It tells you about artificial discs, a treatment used for a slipped disc.

Do they work?

We haven't looked at the research on artificial discs in the same detail we have for the other treatments we cover. (To learn more, see Our method.) But we're including some information to answer questions you might have.

What are they?

An artificial disc is used to replace part, or all, of the disc that is causing your pain. Doctors can replace the whole disc or just the soft, jelly-like centre. Artificial discs are usually used when your own disc is very badly damaged, torn, or worn (doctors sometimes call these discs 'degenerated'). Artificial discs can also be used when other treatments haven't helped. ^[107]

Artificial discs are designed to act like your own discs. They are usually made of soft plastic between two metal plates. Doctors normally fit the artificial disc into your spine through a small cut near your belly button. It is a form of keyhole surgery, carried out through a small opening, which usually results in a faster recovery than conventional surgery.

How can they help?

This is a new surgical treatment for a slipped disc, and there is very little research on what happens in the long term to people who get an artificial disc. A review of the studies on artificial discs from 2006 concluded that more good-quality studies (randomised controlled trials) should be carried out before surgeons start to do these operations widely. ^[108]

There has been some research on artificial discs, and the results are promising. In one study, 53 patients were given an artificial disc. ^[109] Doctors found that 9 out of 10 patients had a good or excellent result three months after the surgery.

Slipped disc

Another study included 144 patients.^[110] Some people were given an artificial disc and others were given a different type of surgery called fusion. Fusion surgery aims to reduce pain by joining together two vertebrae that lie next to the damaged or worn disc. Doctors found that two years after surgery the people given an artificial disc were just as likely to be happy with the results of their treatment as those who'd had fusion surgery.

But these studies were small. One larger study reported less successful results.^[111] Just over 57 in 100 people who had the artificial disc had a successful operation compared with 46.5 in 100 people who had fusion surgery.

We need to see the results of lots of other studies before we can say whether artificial discs really help people with a slipped disc.

Can they be harmful?

As with any surgery, there is the risk of problems including infections and damage to nerves and blood vessels.^[107] There's also the risk that you will still have some pain after surgery and that the new disc will wear out after a few years.^[107]

Disc coblation

In this section

[Does it work?](#)

[What is it?](#)

[How can it help?](#)

[Can it be harmful?](#)

This information is for people who have a slipped disc. It tells you about surgery using heat (coblation), a treatment used for a slipped disc.

Does it work?

We haven't looked at the research on surgery using heat in the same detail we have for the other treatments we cover. (To learn more, see Our method.) But we're including information about this treatment because you may have questions about it.

What is it?

Surgery using heat is when a surgeon uses a heated needle to burn away the damaged part of your disc. You'll need to go to hospital, but you shouldn't have to stay overnight.

Using heat to destroy tissue in your body is called **coblation**. It's short for **cold ablation**. This might sound odd, but it's called cold ablation because a low level of heat is used. The full name of this operation is **percutaneous disc decompression using coblation**.

You'll probably be given a **local anaesthetic** to numb your back. Most people don't need a **general anaesthetic** to make them sleep, but you may be given a drug to help you relax (a **sedative**).

Slipped disc

A needle is put into your back, into the disc that's causing your problem. Your doctor will use an X-ray to see where to guide the needle. A heated probe is then put through the needle and into your slipped disc.

The probe reaches a temperature of between 40°C and 70°C (between 104°F and 158°F). The heat burns into the disc. The doctor doing the operation will keep using the probe until the part of the disc that's causing pain has been destroyed.

Guidelines for doctors

The National Institute for Health and Care Excellence (NICE), which advises the NHS on new treatments, has looked at whether surgery using heat is a good treatment for a slipped disc. ^[112]

NICE says that the research suggests there are no serious safety problems with this operation. And, there's some evidence that it can get rid of the pain of a slipped disc and help people get back to normal. But, we don't know how well it works in the long term.

However, surgery using heat is still a fairly new treatment. If your doctor suggests this operation, he or she should explain that there's still some uncertainty about how well it works. You should be given clear, written information about the benefits and possible risks.

How can it help?

Doctors have followed people who've had this operation to see how well they do. One study looked at nearly 1,500 people. ^[112] Nearly one half of the people had no pain and were back to their normal activities two weeks after their operation. Slightly more than one half had no pain and were back to normal one year later. Another study looked at 69 people. ^[112] Three-quarters of them had less pain one year later.

However, none of the studies followed people for more than one year. So, we don't know how people who've had this operation get on in the long term. Medical experts say we still can't be certain how well the operation works. ^[112]

Can it be harmful?

The studies didn't mention any serious problems people had after their operation. But, some people got pain in their lower back for a few days after this operation. Doctors also said that, in theory, the operation could also cause these side effects:

- An infection
- Damage to the nerves in your back
- Pain
- Bad bleeding (a haemorrhage).

Further informations:

Do I have sciatica?

Sciatica is usually an aching or burning pain that runs from your lower back, through one of your buttocks, and into the back of your thigh.

But other parts of your leg may be affected. And you may notice other symptoms.

- The pain might run further down into your calf, your foot, or even your toes.
- You may not get pain. Sciatica can also make these parts of your body feel numb. Or you may get 'pins and needles'.
- The muscles in your thigh, calf, or foot may feel weaker than usual. So you may find it harder to do things like curl your toes.
- Your reflexes may change. For instance, you may not react as quickly to something like a pin prick on your thigh.
- The muscles in your back can get tight. This can cause your lower back to lose its normal inwards curve.^[5] Doctors describe this as the muscles 'going into spasm'.

Things that can make sciatica worse include:^{[5] [1] [13]}

- Coughing, sneezing, or straining
- Standing up or sitting down
- Bending over
- Getting up after you've been lying down
- Using your outstretched arm to do things like vacuum.

Things that can make sciatica feel better include:^[13]

- Walking and doing your everyday activities
- Lying on your back and clasping your knees to your chest.

More about steroids injected into the spine

If you need to have an injection of steroids into your spine, it will be done by a doctor who specialises in treating pain and back problems. This may be a surgeon, an anaesthetist, or a radiologist.

You don't need to stay in hospital to have this kind of injection (an epidural corticosteroid injection). It's done as an outpatient procedure.

The doctor will often use X-ray pictures to help make certain that the medicine goes in at the right place.

Here's what happens.

- The doctor will ask you to lie face down.
- Your lower back will be uncovered.
- The doctor will give you an injection with a local anaesthetic in the area where he or she plans to give the steroid injection. This will make that area numb for a while.
- When the local anaesthetic has started to work, the doctor will give you the steroid injection.
- The doctor may mix the steroid drug with more local anaesthetic to increase the pain-relieving effect.
- As soon as your doctor is certain that the injection hasn't caused any problems, you'll be able to get dressed and go home.

Warnings about side effects of NSAIDs

Nonsteroidal anti-inflammatory drugs (NSAIDs) are used to treat pain and inflammation. Ibuprofen is probably the best-known NSAID. Although they are often useful, they can have side effects, including causing stomach upsets and ulcers, or more rarely, allergies or problems with your kidneys or liver.^[74]

As well as these other side effects, people who take high doses of some NSAIDs for a long time may have a slightly higher risk of getting a heart attack or a stroke. High doses of NSAIDs may be used over a long period of time to treat conditions such as arthritis. People who have heart problems shouldn't take diclofenac.^[73]

Slipped disc

It's not always clear what counts as a long time for taking NSAIDs. In some research, two-thirds of the heart attacks happened in studies where people took NSAIDs for one year or longer. ^[75]

NSAIDs you can buy over the counter

You can buy low doses of some NSAIDs, such as ibuprofen, at a pharmacy. Taken at this lower dose and for a short time, ibuprofen doesn't seem to increase people's risk of a heart attack or stroke. ^[76]

You can also get larger doses of ibuprofen on prescription from a doctor (see our information on prescription ibuprofen below). Taking these larger doses every day may slightly increase your risk of a heart attack or stroke. But these doses are higher than the amount you'd take for a headache or other kinds of short-term pain.

Diclofenac is another NSAID that you can buy in low doses over the counter. It's sold for treating headaches, other aches and pains, and cold and flu symptoms. Diclofenac does increase the risk of heart attacks and strokes if used regularly. ^[77] However, there's probably much less of a risk if you're taking low doses for short periods of time. ^[78] People who have heart problems shouldn't take diclofenac. ^[73]

You can also buy an NSAID called naproxen without a prescription, for treating period pain. Naproxen doesn't seem to cause much increase in the risk of heart attacks or strokes. ^[75] ^[77] ^[79]

NSAIDs your doctor may prescribe

Selective COX-2 inhibitors

Selective COX-2 inhibitors are a newer type of NSAID. Some people got stomach problems as a side effect of taking older NSAIDs. COX-2 inhibitors were designed to cause less irritation to your stomach. But research has found that these newer drugs can slightly increase your risk of a heart attack or a stroke.

COX-2 inhibitors called valdecoxib (brand name Bextra) and rofecoxib (Vioxx) have been taken off the market because of their side effects. ^[76]

Other COX-2 inhibitors are still available in the UK. These include:

- celecoxib (Celebrex)
- etoricoxib (Arcoxia)
- meloxicam (Mobic).

The overall risk of having a heart attack or stroke when taking these drugs is fairly small. For every 1,000 people regularly taking high doses, an extra three people will have a

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heart attack or stroke.^[75] Your doctor can help you weigh up the risks and benefits these drugs will have for you.

Also, you should not take etoricoxib if you have high blood pressure.^[80] But you can take it once your blood pressure is under control.

Other NSAIDs

There are several NSAIDs that aren't COX-2 inhibitors, which may also be prescribed by your doctor. They include (with brand names):

- diclofenac (Diclomax, Motifene, Voltarol)
- etodolac (Eccoxolac, Etopan, Lodine)
- ibuprofen (Brufen)
- ketoprofen (Oruvail, Orudis)
- mefenamic acid (Mobic)
- naproxen (Naprosyn, Arthrofen).

Some of these NSAIDs may cause a small increase in your risk of a heart attack or stroke. Research has found that regularly taking high doses of ibuprofen or diclofenac over a long period of time may increase your risk of these problems.^[76]

The body that regulates medicines in the UK to make sure that they work and that they are safe is the Medicines and Healthcare products Regulatory Agency (MHRA).^[73] It has issued a warning about diclofenac. The MHRA says that people should not take diclofenac if they have serious heart conditions, such as heart failure, heart disease, circulatory problems, or if they have ever had a heart attack or stroke.

- Taking diclofenac has a similar risk of heart attack to some COX-2 inhibitors.^[76] That would mean three extra heart attacks or strokes each year for every 1,000 people taking high daily doses
- Naproxen may be safer than COX-2 inhibitors.^[76] Most studies so far seem to show that naproxen doesn't increase people's chances of getting a heart attack or a stroke.^[75] ^[77] One study did suggest a small increase in the risk of stroke in people who took naproxen, but it was less than the increased risk with a COX-2 inhibitor.^[79]

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Guidelines for doctors say that for most people, the benefits of these drugs outweigh the risks.^[81] The risks are probably lower for people who only take NSAIDs for a short time or take smaller doses.^[76]

Guidelines for doctors

Doctors have guidelines about how they should prescribe COX-2 inhibitors and other NSAIDs. They say that:^[76]

- People should take the lowest dose of an NSAID that works for them
- People should only take NSAIDs for as long as they need to. People taking them for a long time should have their treatment reviewed regularly
- People who already have heart disease shouldn't take COX-2 inhibitors
- Doctors should weigh up the risks and benefits of NSAIDs for each person. For example, your doctor may suggest a COX-2 inhibitor if you're at risk of stomach problems, but not of a heart attack
- People are more likely to get stomach problems if they take aspirin as well as an NSAID. People should only take aspirin and an NSAID together if they really need to.

If you're worried about the medicine you're taking, talk to your doctor.

More about standard surgery

If you have standard surgery for a slipped disc, you will need to have a general anaesthetic .

The surgeon makes a cut about 25 millimetres (1 inch) to 65 millimetres (2.5 inches) long. The opening is right over the bones of the spine where the damaged discs are located.^[18]

The surgeon cuts through the skin and muscle so that he or she can see the backbone. To get to the damaged part of the disc, the surgeon may have to remove:

- A piece of the ligament that helps hold the bones of the spine (called vertebrae) together
- A piece of the bone that covers the main bundle of nerves.

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Once the surgeon can see between the vertebrae, he or she can remove the parts of the disc that are damaged and are bulging out of place, as well as any pieces that have broken off. The surgeon will take just enough of the disc material to stop the pressure on the nerve. The rest of the disc needs to stay in place to keep working as a shock absorber.

The surgeon then closes the opening in the back with stitches. Sometimes fluid can build up after an operation. You may have a tube coming out of the opening to let fluid drain into a bag or bottle.

After your operation you may need painkillers. You may get advice to do some walking as soon as you have fully recovered from the anaesthetic. You may need help from a nurse or physiotherapist at first. Walking will take the pressure off the nerve that was being pressed by the damaged disc. This will help the nerve recover.

The physiotherapist may give you some exercises to do. You may also be given some advice, such as: ^[85]

- Don't sit for long periods of time (sitting puts pressure on the discs)
- Don't lift things that weigh more than 2 kilograms (just under 5 pounds) in the first four weeks after surgery
- Don't drive until your doctor says it's OK to do so.

Things that can go wrong when you have a discectomy

Here are some problems that can happen if you have standard surgery for a slipped disc.

- The surgical wound on your back may become infected. This happens to about 2 in 100 people. ^[91]
- The nerves that come out of your spine can be damaged during surgery. This happens in 3 or 4 of every 100 operations. ^[91] Damage to the nerve roots can cause pain or loss of feeling, and these problems can be permanent. But lasting problems like these happen in less than 1 in 100 operations. ^[92]
- The sheath that surrounds your spinal cord might be damaged during surgery. Some of the fluid that bathes the spinal cord could leak out. This happens in about 3 or 4 of every 100 operations. This problem is called a dural tear. It shouldn't affect the results of surgery, but if it happens, your doctor will ask you to lie down for a few days to minimise leakage of fluid and to let the tear heal. ^[91]

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- It is also possible, but rare, for your blood vessels to become damaged during surgery. If this happens, you may start bleeding inside your body.^[93]

More about the risks of disc surgery using a microscope

Surgery that's done with the aid of a microscope seems to have about the same risks as [standard surgery](#) . But the chance of nerve roots being damaged during the operation seems to be less with surgery using the microscope than with standard surgery.

Damage to nerve roots happens in less than 1 in 100 operations where the surgeon uses a microscope, but it happens in 3 to 4 of every 100 standard disc operations.^[91]

Here's what we know about some possible problems of surgery where the surgeon uses a microscope.^[91]

- About 2 people out of 100 who have this operation get infections.
- In about 3 to 4 of every 100 operations, the sheath that surrounds the spinal cord gets damaged. This allows some of the fluid that bathes the nerves of the spinal cord to leak out. This problem is called a 'dural tear'. It should not affect the results of surgery. But if this happens, your doctor will ask you to lie down for a few days to minimise leakage of fluid and to allow the tear to heal.

Glossary:

tendons

Tendons are the tough, rope-like connections between muscles and bones.

ligament

A ligament is a strong piece of tissue that connects one bone to another. For example, ligaments in your ankle connect the bones of your leg to the bones of your heel.

inflammation

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

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.

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.

dependent

Dependent is another way of saying addicted. If you're dependent on a drug, it means you get unpleasant withdrawal symptoms if you don't take it.

MRI scan

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A magnetic resonance imaging (MRI) machine uses a magnetic field to create detailed pictures of the inside of your body.

CT scan

A CT scan is a type of X-ray. It takes several detailed pictures of the inside of your body from different angles. CT stands for computed tomography. It is also called a CAT scan (computed axial tomography).

physiotherapist

A physiotherapist is a health professional who is trained to use physical activity and exercises to help people's bodies heal.

chiropractor

A chiropractor is a type of therapist who manipulates your joints and spine with his or her hands. This aims to encourage healing by realigning the bones of the joint or spine and relieving pressure on your nerves.

osteopath

An osteopath is a health professional who flexes and moves your bones, joints and muscle. Osteopaths aim to help people's bodies heal, particularly after injuries.

stroke

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

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.

infection

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

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.

endorphins

Endorphins are chemicals that the brain makes. They are the body's own painkillers.

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.

withdrawal symptoms

Withdrawal symptoms are when you get unpleasant physical or mental symptoms because you stopped taking a drug you were physically dependent on. You can become physically dependent on a drug if it alters the level of certain chemicals in your body. This makes your body produce less of those chemicals or change how it responds to them. Also, some drugs work in a similar way to chemicals that naturally occur in your body. This may mean your body stops making its natural versions. If either of those things happens, your body will need the drug to function normally and you will feel or become ill if you suddenly stop taking the drug. You can get withdrawal symptoms from some prescription medicines, as well as some illegal drugs.

antidepressant

Antidepressants are medicines used to treat depression and sometimes other conditions. They work by changing the levels of chemicals in your brain called neurotransmitters. There are three main types of antidepressants, which work in different ways: selective serotonin reuptake inhibitors (SSRIs), monoamine oxidase inhibitors (MAOIs) and tricyclic antidepressants (TCAs).

selective serotonin reuptake inhibitors

Selective serotonin reuptake inhibitors (SSRIs) are drugs that are used to treat depression. Serotonin is a chemical in your brain (called a neurotransmitter) that affects your mood. SSRIs increase levels of serotonin in your brain. This helps to improve your mood.

immune system

Your immune system is made up of the parts of your body that fight infection. When bacteria or viruses get into your body, it's your immune system that kills them. Antibodies and white blood cells are part of your immune system. They travel in your blood and attack bacteria, viruses and other things that could damage your body.

rheumatoid arthritis

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

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Crohn's disease

Crohn's disease causes inflammation in your bowel. It usually affects your small intestine, but can happen anywhere in your digestive tract. It causes diarrhoea and bloody stools.

intravenous infusion

When a medicine or a fluid, such as blood, is fed directly into a vein, it's called an intravenous infusion (or IV). To give you an intravenous infusion, a nurse, technician or a doctor places a narrow plastic tube into a vein (usually in your arm) using a needle. The needle is then removed and the fluid is infused (or dripped) through the tube into the vein.

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.

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.

steroids

Steroids are a type of chemical. Your body naturally produces steroids, which play a part in many of its processes. For example, steroids are involved in how your immune system, reproductive system and metabolism work. Steroids can also be given as medicines and are used for a number of different conditions: including asthma, rheumatoid arthritis and eczema. Corticosteroids are not the same as the steroids used by some body builders and athletes. Those steroids are called 'anabolic steroids'.

NSAIDs

NSAID stands for nonsteroidal anti-inflammatory drug. NSAIDs help with pain, inflammation and fever. They are called 'nonsteroidal' because they don't contain any steroids. Aspirin and ibuprofen are both NSAIDs.

ulcer

An ulcer is an open sore. Ulcers can happen in many parts of your body, such as in your stomach, and the skin of your legs, mouth, or genitals.

heart attack

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

arthritis

Arthritis is when your joints become inflamed, making them stiff and painful. There are different kinds of arthritis. Osteoarthritis is the most common type. It happens when the cartilage at the end of your bones becomes damaged and then starts to grow abnormally. Rheumatoid arthritis happens because your immune system attacks the lining of your joints.

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.

anaesthesia

Anaesthesia is when you can't feel things in parts of your body. You may be given drugs that cause anaesthesia (called anaesthetics) before you have an operation, to stop you feeling pain. Anaesthetics can be general anaesthetics, which make you fall unconscious. Or they can be local anaesthetics, which make the part of your body they're applied to numb. Sometimes, people have anaesthesia because of problems with their nervous system.

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.

high blood pressure

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

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).

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sedation

A feeling of relaxation and calm, or the act of creating a feeling of calm by administering a drug.

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.

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.

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.

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