

Patient information from the BMJ Group

Whiplash

In this section

[What is it?](#)

[What are the symptoms?](#)

[How is it diagnosed?](#)

[How common is it?](#)

[What treatments work?](#)

[What will happen?](#)

[Questions to ask](#)

Whiplash

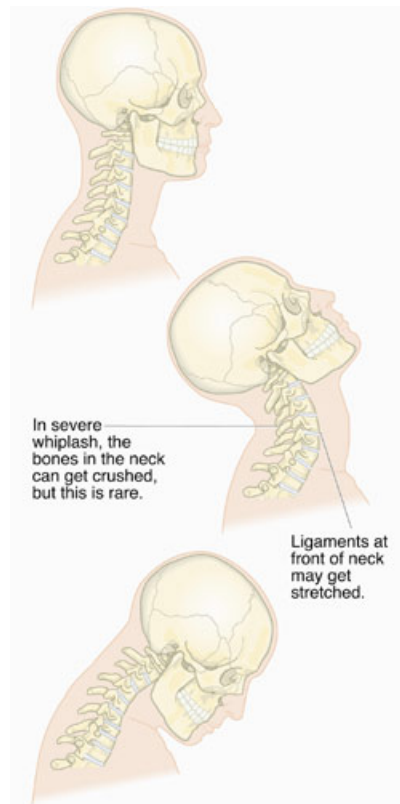
You can get whiplash after a car crash or another injury in which your head is suddenly thrown back. If you have whiplash, your neck is painful and stiff. It should get better on its own after a few days. But if your injury is serious or lasts a long time, you may need treatment.

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

You can get whiplash if your head is suddenly jolted backwards and forwards in a whip-like movement. This type of neck injury often happens in car crashes. Your neck muscles and ligaments (the strands of tissue that hold your bones together) stretch more than normal and may be sprained.

Whiplash



If your head is suddenly jolted backwards and forwards, your neck muscles and ligaments can be stretched more than normal.

Being in a car crash is a common way of getting whiplash. You may have been in a car that was hit from behind by another car. ^[1] But you can also get whiplash if your car is hit from the side or from the front. Even slow bumps to your car can cause enough whipping to hurt your neck.

You can also get whiplash from a sports injury. Or you might jolt your neck when you trip or fall, but this is a less common cause.

Some people get a severe whiplash injury that needs to be treated in hospital. ^[2] Sometimes the spine or spinal cord gets damaged, but this isn't common. Here we look at common whiplash to neck muscles, not at whiplash that affects the spine or spinal cord.

Your doctor can rule out more serious reasons for your pain and stiffness by examining your neck. The doctor may also order some tests. ^[1] For example, you might have an x-ray of your neck, a CT scan, or an MRI scan. Sometimes doctors do blood tests to look for inflammation or more serious causes of neck pain.

What are the symptoms of whiplash?

Your neck will be sore and painful, especially when you try to move it. The pain will probably feel worse the day after the injury.

Whiplash

You may have some of the following symptoms within the first two days after your injury, or they might start a day or two afterwards:^[3] ^[4]

- A painful and stiff neck
- Headaches
- Pain in your shoulder or between your shoulder blades
- Pain in your lower back
- Pain or numbness in your arm and hand
- Difficulty concentrating and feeling irritable
- Dizziness, ringing in your ears, or blurred vision. This should last for only a short time. Tell your doctor if these symptoms don't go away soon.

A severe whiplash injury can cause more serious problems that need hospital treatment. The spine or **spinal cord** is sometimes damaged, but this is not very common. You should go back to see your doctor:

- If the pain becomes worse
- If the pain lasts more than four to six weeks
- If you get any numbness, weakness, or pins and needles in your arm or hand.

How common is whiplash?

Whiplash is fairly common.

Up to 3 people in 1,000 get whiplash every year.^[5]

About 1 in 5 people who are involved in a car crash where their car is hit from behind get pain and stiffness in their neck.^[6]

What treatments work for whiplash?

Your pain and stiffness should start to get better within a few days. You should see your doctor if your symptoms are very bad or get worse, or if you don't feel better after a few days.

- Keeping your neck moving as normally as possible helps to stop it stiffening up.
- Taking painkillers that you buy in a pharmacy may help with the pain.

Whiplash

- Using a firm, supportive pillow at night might help.
- Resting your neck in a soft collar probably won't help.

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

Treatment Group 1

Treatments for whiplash

Treatments that are likely to work

- [Early mobilisation](#)
- [Early return to normal activity](#)

Treatments that need further study

- [Drug treatments](#)
- [Exercise](#)
- [Treatment by a team of specialists](#)

Other treatments

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

- [Soft collars and pillows](#)

What will happen to me?

The pain and stiffness from whiplash usually go away in a few days or weeks. But they can sometimes last longer.

Up to 2 in 5 people still have some symptoms 15 years after their injury.^[7] We don't know why some people get more problems than others.^[8] But we know there are things that make some people more likely to have problems. These things are called risk factors. For example, not wearing a seat belt, having severe neck pain, having a history of neck pain, and being a woman all mean you're more likely to experience long-term symptoms.

^[9] Whiplash is more likely to cause disability than neck pain from other causes.

Whiplash

One study found that people who developed post-traumatic stress, and who felt they were less in control of their life were more likely to have whiplash symptoms that lasted more than six months. ^[10]

Another study found that when people with whiplash expect to get better quickly, they really do make a better recovery. ^[11]

Treatments:

Early mobilisation

In this section

You're less likely to have long-term neck problems if you get advice from a [physiotherapist](#) about how to move your neck or what exercises can help with your neck pain. These treatments are more likely to work if you start doing them straight away after the injury. ^[19] This is called early mobilisation.

We don't know whether mobilisation has a risk of side effects. The studies don't tell us. But it's unlikely that mobilisation will harm you if you are treated by a trained therapist.

Four studies (randomised controlled trials) found that early mobilisation worked better for people with whiplash than resting their neck in a [soft collar](#) for up to 14 days. ^[19] ^[20] ^[21] ^[22] The people who moved their neck as soon as possible had less pain later on. They could also move their neck more after a month. ^[20]

Another study found that people who were given advice on moving their neck were less likely to still have neck problems later on. Less than a quarter of these people had neck problems two years later. But almost half of the people who had rested their neck at first or tried something to relieve the pain (such as putting a hot or cold pack on their neck) still had neck pain and stiffness two years later. ^[21]

Early return to normal activity

In this section

You'll probably have less neck pain and stiffness later on if you get back to your normal routine as soon as possible after a whiplash injury.

One study found that people with whiplash who followed advice to "act as usual" had fewer problems six months later. ^[23] The people who rested their neck in a [collar](#) and took two weeks off work were more likely to have continuing pain, stiffness, headaches, and memory and concentration problems. But just as many people in each group (about 1 in 10) still had severe neck pain six months later. It didn't make any difference whether they rested their neck or got back to normal as soon as possible.

Whiplash

More research is needed to know for certain that getting back to normal as soon as possible is safe and better in the long run than resting your neck.

Drug treatments

In this section

People often take medicine to help their pain. There's not much research on using drugs to treat whiplash, but we know that painkillers work for other kinds of pain.

Drugs used for whiplash can sometimes cause side effects.

Several different kinds of medicines can be used to treat pain. Here is some information about the most common ones. ^[24]

Painkillers: You can buy some painkillers, such as paracetamol, in a pharmacy. But you'll need a prescription from your doctor to get stronger ones.

Paracetamol is safe if you follow the directions on the package. But be careful not to take too much, as an overdose can cause dangerous liver damage.

Stronger painkillers, such as codeine, can cause nausea, vomiting, drowsiness, and constipation. In very rare cases, it may harm your baby if you're breastfeeding. ^[25] If you take drugs like codeine regularly, you can get withdrawal symptoms when you stop using them.

We found no studies on how well these drugs work for whiplash.

Non-steroidal anti-inflammatory drugs (NSAIDs): NSAIDs, such as ibuprofen, help pain and reduce inflammation .

Some people get side effects from NSAIDs, such as stomach pains, diarrhoea , skin rashes, headaches, and dizziness. 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 take an NSAID for a short time to treat pain. But if you'd like to read more, see [Warnings about side effects of NSAIDs](#) . People who have heart problems shouldn't take diclofenac. ^[12]

We couldn't find much research on using NSAIDs for whiplash. We found one study (a randomised controlled trial) that looked at using a single injection of a strong NSAID called ketorolac (brand name Toradol) for people with neck pain. ^[26] But the study didn't look specifically at how this treatment worked for whiplash, so we can't say if it's likely to help with this type of neck pain.

Muscle relaxants: These drugs relax your muscles and also make you calm and sleepy. They include benzodiazepines, such as diazepam. Muscle relaxants are sometimes used for people in severe pain from muscle spasms, but they are used for only a short period.

Whiplash

Muscle relaxants can make you feel sick, dizzy, or drowsy. It's also possible to become dependent on these drugs if you take them for too long. This means you have withdrawal symptoms if you stop taking them.

We found no studies that show whether these drugs help whiplash.

Exercise

In this section

If you start a special exercise programme soon after getting whiplash, you might be in less pain later on. Exercises supervised by a physiotherapist may work better in the long run than resting your neck in a [soft collar](#). However, the research is mixed, and not all the studies looking at exercise are good quality. So we can't be sure that it helps with whiplash.

One study (a [randomised controlled trial](#)) found that people who started exercise within 48 hours of hurting themselves were less likely to still be in pain after six weeks. Only a quarter of the people who exercised still had neck problems, compared with half of those who rested their neck in a soft collar.^[27] The exercise programme was closely supervised by a physiotherapist.

Another study found that doing exercises and getting advice on whiplash worked better than just getting advice.^[28]

But we also found a study that said exercise didn't help. People who got advice from their doctor about [moving their neck](#) did just as well as those who got exercise advice from a physiotherapist.^[29] The two groups of people had the same amount of pain and headaches, and could do the same amounts of work.

There needs to be more research on whether exercise as soon as possible after a whiplash injury is safe and better in the long run than resting your neck.

Treatment by a team of specialists

In this section

There's some research to show that having a variety of treatments given by a team of experts can reduce neck pain from whiplash and help you get back to work sooner. But more studies are needed to be certain. Treatment by a team of specialists isn't always available.

We found one small study (a [randomised controlled trial](#)) that looked at 60 people who had whiplash after a car crash.^[30] Some of the people had a combination of treatments that included training to improve their posture, counselling, exercises, and hands-on treatment, such as manipulation (in manipulation, a trained therapist uses short, sharp movements to push a joint slightly further than it would usually move).

Whiplash

The rest just had treatments to try to reduce pain, such as using hot or cold packs on their neck, or using a TENS machine. (TENS stands for transcutaneous electrical nerve stimulation.) A TENS machine 'tickles' the nerves in a painful area with small pulses of electricity. This may make the nerves less likely to carry feelings of pain to your brain.

The people who had combination treatment had less pain after one month and six months. And they got back to work sooner after their accident.

Soft collars and pillows

In this section

Studies show that resting your neck in a soft collar probably won't work as well as other treatments, including [early mobilisation](#) , [trying to return to normal activities as soon as possible](#) , and starting a [special exercise programme](#) within 48 hours of getting whiplash. ^[19] ^[20] ^[21] ^[22] ^[23] ^[27]

But some experts say using a firm, supportive pillow at night might help.

Further informations:

Warnings about side effects of NSAIDs

Non-steroidal anti-inflammatory drugs (NSAIDs) are used to treat pain and inflammation. Ibuprofen is probably the best-known NSAID.

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. ^[12]

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 a year or longer. ^[13]

Below, we look at the different kinds of NSAIDs and what the research that has been done so far shows about their safety.

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. ^[14]

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

Whiplash

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.^[15] However, there's probably much less of a risk if you're taking low doses for short periods of time.^[16]

You can also buy an NSAID called naproxen without a prescription, for treating period pain. Naproxen doesn't seem to increase the risk of heart attacks or strokes.^[13] ^[15]

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.^[14]

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

- Celecoxib (Celebrex)
- Etoricoxib (Arcoxia).

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 heart attack or stroke.^[13] 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.^[17] 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
- Ibuprofen

Whiplash

- Ketoprofen (Oruvail, Orudis)
- Meloxicam (Mobic)
- Naproxen (Naprosyn, Synflex).

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. ^[14]

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). It has issued a warning about diclofenac. ^[12] 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.

We don't know exactly how big the risk is, or how it varies between the different drugs. The research that has been done so far suggests that:

- Taking diclofenac has a similar risk of heart attack to some COX-2 inhibitors. ^[14] 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. ^[14] Studies so far seem to show that naproxen doesn't increase people's chances of getting a heart attack or a stroke. ^[13] ^[15]

Guidelines for doctors say that for most people, the benefits of these drugs outweigh the risks. ^[18] The risks are probably lower for people who only take NSAIDs for a short time or take smaller doses. ^[14]

Guidelines for doctors

Doctors have guidelines about how they should prescribe COX-2 inhibitors and other NSAIDs. They say that: ^[14]

- 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

Whiplash

- 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.

Glossary:

spinal cord

Your spinal cord is a thick bundle of nerves that runs down your backbone (spine). These nerves carry messages between your brain and the rest of your body. The bones (vertebrae) in your neck and back protect your spinal cord. If your spinal cord gets damaged, you may lose feeling in your legs or arms.

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.

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).

MRI scan

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

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.

heart attack

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

stroke

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

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.

physiotherapist

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

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.

diarrhoea

Diarrhoea is when you have loose, watery stools and you need to go to the toilet far more often than usual. Doctors say you have diarrhoea if you need to go to the toilet more than three times a day.

dependent

Whiplash

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.

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.

TENS (transcutaneous electrical nerve stimulation)

Transcutaneous electrical nerve stimulation (TENS) is a treatment used to reduce pain. It uses a small battery-operated device with wires connected to pads that you stick onto the part of your skin where you feel the pain. Small pulses of electricity stimulate the nerves in this area. While these nerves are being 'tickled' by the electrical current, they may be less able to carry the feelings of pain to your brain.

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Whiplash

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