

Patient information from the BMJ Group

Shoulder pain

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](#)

Shoulder pain

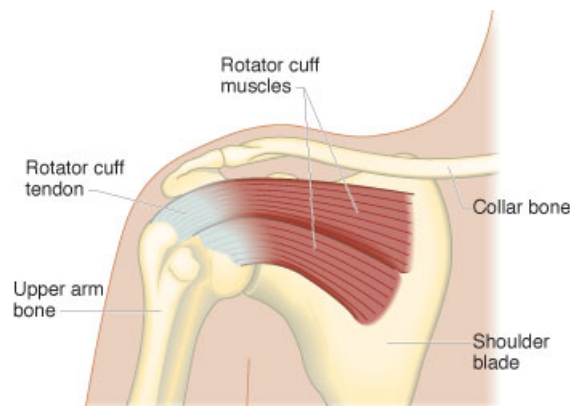
A painful shoulder can make even simple tasks difficult to do. You might find it hard to use your arm or your hand. But getting the right treatment can help.

We've brought together the best research about shoulder pain 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 shoulder pain?

Shoulder pain is any pain in or around your shoulder joint. You may feel the pain most when you reach behind your back or overhead.

There are many reasons why you may get a painful shoulder. The most common cause is a problem with the **tendons** (cords of tissue) that attach your shoulder muscles (rotator cuff muscles) to the bone of your upper arm. More than 6 in 10 people who have shoulder pain also have problems with their tendons. ^[1]



If you have pain in your shoulder, it's probably because of a problem with your tendons.

Four tendons called **rotator cuff tendons** hold your shoulder joint in place. Your shoulder is the most flexible joint in your body. But its wide range of movement also means that it's easy to injure your shoulder. You can get pain if your rotator cuff tendons get damaged or swollen, or if there are changes in the bone around them.

Shoulder pain

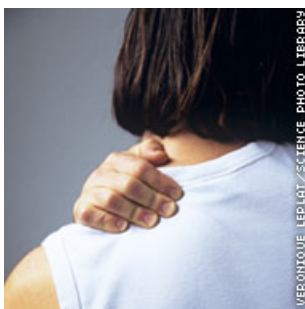
- Sometimes your tendons get trapped under the bony arch in your shoulder. This pinching can damage your tendons, causing **inflammation** .
- Your shoulder can become weak as you get older, or because of an injury.
- A repeated activity, such as throwing a ball or heavy lifting, can also damage your tendons or make them tender.
- If a rotator cuff tendon tears, your injury will be more serious.

There are some other reasons why you may get shoulder pain.

- You have a **frozen shoulder** that is painful and hard to move. You may also hear this called **adhesive capsulitis**. It can happen if you don't use your shoulder after an injury, causing it to stiffen up. Women, older people, and people who've had shoulder surgery are more likely to get a frozen shoulder. ^[2] You're also more likely to get it if you have a medical condition such as **diabetes** or if you've had a **stroke** .
- You have **calcific tendonitis**, which means you have calcium salt deposits in a tendon. This kind of shoulder pain mostly starts suddenly and usually affects women.
- You have **arthritis** in the joints around your shoulder. ^[3]
- You have neck problems, such as a pinched nerve. Doctors call this **referred pain**, because the pain is caused by a problem in one part of your body (your neck), but you feel the pain in another area (your shoulder).

What are the symptoms of shoulder pain?

The pain in your shoulder can restrict what you can do. Some people find it hard to sleep and concentrate. Living with a painful shoulder can also affect your mood.



If you have shoulder pain, you may find it hard to use your hand or your arm.

Pain is the most common reason why people go to their doctor for shoulder problems. The discomfort and pain in your shoulder and upper arm usually happen gradually. ^[4]

Shoulder pain

You'll probably feel pain when you lift your arm behind you or lift it overhead. You may find it hard to sleep on your painful shoulder. You may also find it hard to use your hand or arm. Even simple tasks, such as dressing, washing, and eating, can become a problem.

If you have a **frozen shoulder**, you probably won't be able to move as easily as usual. Your shoulder joint can be so tight and stiff that you might not even be able to raise your arm. The stiffness and pain may feel worse at night.

How common is shoulder pain?

Having a painful shoulder is common.

We don't know exactly how many people have shoulder pain. Studies suggest that between 4 in 100 and 20 in 100 people have pain in their shoulder at some time. ^[5] ^[6] ^[7] ^[8] ^[9]

Each year, about 1 in 100 people aged over 45 go to see their doctor with new shoulder pain. ^[10]

Women are slightly more likely than men to get shoulder pain. ^[11]

You're also more likely to get shoulder problems as you get older. People between 40 and 70 are most likely to have a frozen shoulder. ^[12]

What treatments work for shoulder pain?

There are treatments that can help with shoulder pain. The treatment you need will depend on what's causing your shoulder pain.

Key points about treating shoulder pain

- If you get shoulder pain for no obvious reason and it lasts for more than six weeks, you should see your doctor. If you injure your shoulder in an accident and the pain is very bad, see your doctor as soon as you can. But if the pain is less severe, you might want to wait for one week to see if it improves before seeing your doctor.
- Painkillers, such as paracetamol or ibuprofen, may ease your shoulder pain. You can also try relieving your pain at home by using hot or cold packs.
- Physiotherapy and exercises at home will probably help you move your shoulder more easily and restore your muscle strength if you have tendon problems. We don't know how well this works for a frozen shoulder.
- **Manipulation** (moving your shoulder around while you're under general anaesthetic), **laser treatment** (treatment with an intense beam of light), **nerve blocks** (injections of local anaesthetic), and **shockwave therapy** (treatment that directs strong soundwaves at your shoulder) may also help.

Shoulder pain

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

Home treatments

If you have a painful shoulder, there are some simple home treatments that you can use. There hasn't been much research on home treatments, so we can't say for certain whether they work. But there are several things that might be worth trying.

Simple painkillers, such as paracetamol, may help reduce the pain from your shoulder. We know that paracetamol works as a painkiller, but there hasn't been any research that looked particularly at whether it helps with shoulder pain. If you take paracetamol, make sure you don't take more than the recommended dose. Taking too much paracetamol can damage your [liver](#).

You could also try putting an ice pack on your shoulder. You should wrap the ice in a cloth or towel, as putting ice directly on your body can damage your skin. And don't use an ice pack for more than about 15 minutes at a time. Ice packs are often recommended as part of first aid shortly after an injury.

You may find using heat packs soothing. Or you could try using a towel soaked in warm water. Having a warm bath may also help to relax your painful shoulder. Heat treatments are usually recommended for pain that you've had for some time. They aren't used as first aid after a shoulder injury.

Common sense may tell you to rest a painful shoulder. But resting your shoulder too much can make your joint stiff. Your doctor may advise you to avoid strenuous activities for a while, such as sport or heavy lifting, but make sure you move your shoulder a reasonable amount. ^[15] Or you may be given special exercises to do. If you're not sure how much you should be moving your shoulder, ask your doctor.

Treatment Group 1

Treatments for shoulder pain

Treatments that are likely to work

- [Nonsteroidal anti-inflammatory drugs](#)
- [Physiotherapy, massage, and exercises](#)
- [Laser treatment](#)
- [Shockwave therapy](#)
- [Nerve block](#)
- [Arthroscopic decompression \(nerve surgery for shoulder pain\)](#)

Shoulder pain

Treatments that need further study

- [Acupuncture](#)
- [Electrical stimulation](#)
- [Steroid tablets](#)
- [Steroid injections](#)
- [Opioids](#)
- [Glyceryl trinitrate patch](#)
- [Manipulation under anaesthesia for frozen shoulder](#)
- [Ultrasound](#)
- [Salt water injections](#)

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.

- [Shoulder arthroplasty](#)
- [Trigger point injections](#)

What will happen to me?

There's a good chance that the pain in your shoulder will go away with time, particularly if you are younger. But you may get a painful shoulder again.

One study found that: ^[13]

- 50 in 100 people with shoulder pain had fully recovered within 18 months
- 25 in 100 people had shoulder pain more than once.

Older people may be less likely to recover fully from pain in their shoulder. One study of older people found that most of them still had a painful shoulder three years later. ^[14]

Treatments:

Nonsteroidal anti-inflammatory drugs

In this section

Nonsteroidal anti-inflammatory drugs (NSAIDs) are painkillers. They also help to reduce inflammation . Ibuprofen is a well-known NSAID. You can buy low doses of ibuprofen from a pharmacy. You can get other NSAIDs, or higher doses of ibuprofen, on prescription from your doctor.

We know NSAIDs work as painkillers. There hasn't been a lot of research looking particularly at whether NSAIDs work for shoulder pain. But some good-quality studies (called **randomised controlled trials**) show that NSAIDs can reduce shoulder pain, especially for people with **tendon** problems.^{[16] [17]} To read more about how tendon problems can cause shoulder pain, see [What is shoulder pain?](#)

NSAIDs usually come as tablets. You can also get them as gels or creams that you rub on your skin. But there hasn't been any good research to say whether using these gels or creams helps with shoulder pain.

If you take an NSAID, you can get stomach pains, **diarrhoea** , skin rashes, headaches, or dizziness.

Taking high doses of some NSAIDs every day for a long time can increase your chances of having a **heart attack** or a **stroke** . This isn't likely to be a problem if you're taking them for a short time to treat a painful shoulder. To read more, see [Warnings about side effects of NSAIDs](#) .

Steroid tablets

In this section

Steroid tablets may help in the short term if you have a frozen shoulder, but there hasn't been enough research to know for certain.^[27] (To read about frozen shoulders, see [What is shoulder pain?](#)) Steroids are drugs that help to reduce inflammation. They're similar to chemicals your body makes to deal with inflammation. They're not the same as the anabolic steroids that some bodybuilders use.

One commonly used steroid is called prednisolone.

One study looked at whether taking steroid tablets eased shoulder pain.^[27] It found that after three weeks:

- 96 in 100 people who took the steroid tablets were better
- 48 in 100 people who took a dummy treatment (a **placebo**) were better

Shoulder pain

- People taking the steroid tablets could also move their shoulder more freely.

But another study found that taking steroid tablets didn't make much difference, although they may have helped people get better slightly faster.

The studies that looked at steroid tablets didn't show a long-term benefit.^[27] In one study, after six weeks there was no difference between the people who were treated with steroids and people who took a placebo. This could mean that the benefits of steroids wear off after a few weeks. Or it might be that people who don't have treatment get better on their own eventually, and catch up with the people who take steroid tablets.

Taking steroid tablets for a long time can cause serious side effects, such as weak bones or high blood pressure. But the people in the studies didn't take the tablets for very long. You're unlikely to get serious side effects if you're only taking steroid tablets for a few weeks. However, some people find that taking steroid tablets affects their mood after just a short time.^[28] Rarely, people can become so depressed or anxious that they think about suicide. If you get any worrying symptoms while you're taking steroids, see your doctor straight away.

Physiotherapy, massage, and exercises

In this section

Having physiotherapy and doing special exercises at home can reduce your shoulder pain and help you to move your shoulder more easily.^{[29] [30] [31] [32]} Physiotherapy can be used together with other treatments, such as injections, or after surgery.

One good-quality study (called a randomised controlled trial) looked at whether having physiotherapy helped with shoulder pain. The study found that after 24 weeks people with tendon problems who'd had physiotherapy had less pain and could move their shoulder more than the people who'd had a dummy laser treatment (placebo).^[33] Another study found that people who had physiotherapy could move their shoulder more easily after six weeks than people who didn't have physiotherapy.^[30] But after 16 weeks, people's symptoms had improved the same amount whether they'd had physiotherapy or not.

Another good-quality study suggested that the full benefit of physiotherapy and home exercise might take a while to develop. It found that people who had these treatments reported similar improvements after 11 weeks compared with those who had a dummy treatment (sham ultrasound therapy and an inert gel rubbed on their shoulder). After 22 weeks, however, those in the physiotherapy and exercise group had less pain and better movement.^[32]

But we don't know if physiotherapy works as well for a frozen shoulder. There hasn't been a lot of research on this.

The research doesn't say if physiotherapy can cause any side effects.

Laser treatment

In this section

Physiotherapists sometimes treat a painful shoulder with a beam of light known as a laser.

Several small studies looked at whether having laser treatment reduced shoulder pain. ^[34] ^[35] The laser treatment was usually given two or three times a week for five minutes or 10 minutes.

In most of the studies, people who had laser treatment felt less pain. But in one study, having laser treatment for two months made no difference to people's shoulder pain. ^[36]

Researchers have also compared laser treatment with [ultrasound](#). One study found that people who had laser treatment had less pain after two weeks than those who had ultrasound. However, there wasn't much difference between the groups in how much they could move their shoulder and how they rated their symptoms overall. ^[37]

We don't know if laser treatment can have side effects. The research doesn't tell us enough to be certain.

Shockwave therapy

In this section

Doctors sometimes use strong soundwaves to treat a painful shoulder.

Four good-quality studies ([randomised controlled trials](#)) looked at whether having shockwave therapy helps to reduce shoulder pain. These studies showed that if your shoulder pain is caused by a type of tendon problem called **calcific tendonitis**, having shockwave therapy may reduce your pain and help you move your shoulder more easily. ^[38] ^[39] ^[40] ^[41] Calcific tendonitis is when you get calcium salt deposits in a tendon. This kind of shoulder pain mostly starts suddenly and usually affects women.

There isn't any evidence that having shockwave therapy can help if your shoulder pain is due to some other cause. ^[42]

Treatment with soundwaves can also cause a lot of pain. ^[39] You may also get other side effects, such as bleeding under the skin. ^[40]

Manipulation under anaesthesia for frozen shoulder

In this section

Manipulating your frozen shoulder (where your shoulder is moved around to loosen up the joint) may help you get better, although there hasn't been enough research to know

Shoulder pain

for certain. You'll be given a **general anaesthetic** when you have this treatment, so you'll be asleep and your muscles will be relaxed. You may also be given an injection of drugs called **steroids** into your shoulder.

One small, good-quality study (a **randomised controlled trial**) compared having a steroid injection on its own for a frozen shoulder with having a steroid injection and joint manipulation. The study found that people with a frozen shoulder were more likely to get better within three months if they had a steroid injection at the time of joint manipulation than if they had a steroid injection on its own.^[43] But another poorer-quality study found that having joint manipulation worked better without having a steroid injection.^[44]

Having your shoulder joint manipulated under anaesthesia has risks. In one study, about 1 in 50 people ended up with a bone fracture, and 1 in 50 people got a dislocated joint.^[44]

In another study, 30 people who'd had their shoulder joint manipulated had blood around their joint afterwards. This healed on its own in time. Some people also had swelling and torn tendons or **ligaments**.^[45]

Nerve block

In this section

For this treatment your doctor injects a **local anaesthetic** into the nerves around your shoulder. This treatment seems to work if your shoulder pain is because of **arthritis**. It may also help with a frozen shoulder. The research hasn't looked at whether having a nerve block can help with shoulder pain caused by other problems, such as damaged tendons.

One study looked at whether having a nerve block helped people with shoulder pain caused by **rheumatoid arthritis** or conditions where the bone wears away. It found that the nerve block helped reduce people's pain. The people in the study were also able to do more and move their shoulder more easily.^[46]

If you have a frozen shoulder, having a nerve block can reduce your pain.^[47] But it may not help you move your shoulder more easily.

This treatment may make you feel dizzy. And you may get pain and bruising where you have the injection.^[47]

Arthroscopic decompression

In this section

You might have an operation called **arthroscopic decompression** to reduce the pressure on your shoulder joint. This is a type of keyhole surgery. It is done through small cuts in your skin, which means you won't have a big scar. Surgery may help reduce your shoulder

Shoulder pain

pain.^[48] But one study found that **physiotherapy** can work just as well as keyhole surgery.

If you have keyhole surgery, your surgeon will use a small instrument called an **arthroscope** to see inside your joint. An arthroscope is a flexible tube with surgical tools, a miniature camera, and a light on the end.

Your surgeon will make an area under your shoulder blade bigger to reduce the pressure on your muscle. They will cut a ligament and shave away part of your bone inside your shoulder joint. You probably won't be able to move your shoulder for about six weeks after the surgery. Full recovery can take several months.

You can also have this type of surgery done with a laser. But we don't know if this is successful or safe. There hasn't been enough research to say.^[49]

In another operation, called **arthroscopic rotator cuff repair**, surgeons stitch a torn tendon back to the bone where it should be. A small, good-quality study (a **randomised controlled trial**) found that this type of surgery helped with shoulder pain.^[50]

You might also have **open surgery** to repair a tendon or reduce the pressure on your shoulder joint. Unlike keyhole surgery, this involves making a larger cut in your shoulder and using regular surgical tools. A summary of the research (a **systematic review**) found that both open and keyhole surgery work equally well, although you may recover faster after keyhole surgery.^[51]

Electrical stimulation

In this section

Some physiotherapists use electrical stimulation to treat a painful shoulder. They use a device that gives out small pulses of electricity. But there haven't been enough good-quality studies to show if electrical stimulation can help with pain and heal your shoulder.

Steroid injections

In this section

Steroids are drugs that help to reduce inflammation. They're similar to chemicals your body makes to deal with inflammation. They're not the same as the anabolic steroids that some bodybuilders use.

Some research suggests that having steroid injections may help with shoulder pain. But there's not enough research to know for certain. There may be a small benefit in the short term.^[52] ^[53]

Some good-quality studies (**randomised controlled trials**) found that you may feel less pain and be able to use your shoulder more in the first few weeks after an injection.^[52]

Shoulder pain

However, others found that these injections don't seem to have much of an effect.^[54] Having steroid injections doesn't seem to make a difference in the long term.^{[52] [55] [56] [57]}

Some research suggests that having one or two more steroid injections in the weeks or months after your first injection may help more than having one injection on its own.^[58]

Steroid injections usually contain one of these steroids:

- betamethasone
- dexamethasone
- triamcinolone

For extra help in relieving pain, the steroid is often combined with a **local anaesthetic**.

Steroid injections rarely cause side effects, but there's a small chance of getting a flushed face. And, if you're a woman you may get irregular periods.^[52] There's also a chance that one of your tendons can rupture. But this happens in less than 1 in 100 people.^[59] The membrane lining your shoulder joint can become inflamed, but this should get better. This happens in up to 2 in 100 people. You can get an infection after a steroid injection, but this is very rare.

Opioids

In this section

Opioids are strong painkillers. A common one is codeine. There hasn't been any research on taking opioids for shoulder pain.

You need a prescription for most opioids, although you can get combination painkillers containing a low dose of codeine over the counter. You should take opioids only for a few days. This is because you can get addicted to them if you take them for a long time.

Very rarely, breastfeeding babies can get serious problems if their mother is taking codeine.^[60] 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.

Glyceryl trinitrate patch

In this section

Shoulder pain

There hasn't been much research to show that a painkilling patch that releases the drug glyceryl trinitrate into your shoulder helps with shoulder pain. We found one study, but it was small and of poor quality.^[61] The brand names for glyceryl trinitrate patch include Nitro-Dur and Minitran.

You may get side effects if you use glyceryl trinitrate patches. In the study we looked at, about 1 in 5 people got a headache on the first day that they used the patch.^[61]

Ultrasound

In this section

Your physiotherapist may treat your painful shoulder with **ultrasound** (soundwaves to treat pain), but this is unlikely to help. One summary of the research (a **systematic review**) looked at whether having ultrasound for six weeks helped with shoulder pain. The summary found that after one year, the people who'd had ultrasound and the people who'd had fake ultrasound (a **placebo**) had similar amounts of pain and problems with moving their shoulder.^[62]

Another study compared ultrasound with **laser treatment**. It found that people who had laser treatment had less pain after two weeks than those who had ultrasound. However, there wasn't much difference between the groups in how well they could move their shoulder and how they rated their symptoms overall.^[37]

We don't know if ultrasound can be harmful because the research doesn't tell us for sure.

Salt water injections

In this section

An injection of salt water can be used to stretch the capsule of soft tissue that forms part of your shoulder joint. This may help with a frozen shoulder. You might hear this treatment called **hydrodilatation** or **arthrographic joint distension**. The injection may contain a steroid and an anaesthetic as well as salt water.

A review of the research (a **systematic review**) found that people who had this treatment had less pain and were able to move their shoulder more after three weeks than those who had a dummy treatment (a **placebo**).^[63] A small study also found that people who had this treatment had less pain than people who had their shoulder manipulated.^[64]

Acupuncture

In this section

This treatment involves having thin, sterile needles inserted into specific points in your body. It aims to relieve the pain in your shoulder.

Shoulder pain

There hasn't been much good research on acupuncture for shoulder pain. We found one review of the research (a [systematic review](#)) that included one study comparing acupuncture with sham acupuncture.^[65] ^[66] It found no significant difference between the groups after three weeks of treatment.

However, a later study with 130 people found that electro-acupuncture, which uses a small current to stimulate each acupuncture site, worked better than sham electro-acupuncture.^[67] After eight weeks, people who had electro-acupuncture had less pain, were able to move their arm more, and used less pain medicine than those having the sham treatment.

Acupuncture is safe, as long as it's done by a trained acupuncturist. However, some people get mild side effects. In one study, a few people having acupuncture fainted, were dizzy, had an upset stomach or reported anxiety about the treatment. Some also had minor bruising where the needles were inserted.^[67]

Trigger point injections

In this section

Sometimes injections are given into specific, painful points in your muscles to relieve a painful shoulder. The painful spots in your muscle are called **myofascial trigger points**. The injection contains a [local anaesthetic](#) to help with the pain, and may also include a steroid to reduce inflammation. The steroid is a corticosteroid, similar to chemicals your body makes to reduce inflammation. It is not the same as the anabolic steroids that some bodybuilders use.

Shoulder arthroplasty

In this section

People with arthritis or osteoarthritis of the shoulder often have pain, accompanied by reduced movement of the joint, which makes it harder to do everyday activities.

If the symptoms are severe then your doctor may recommend surgery. Here we talk about two kinds of surgery:

- Total shoulder arthroplasty (arthroplasty means surgical repair of a joint)
- Shoulder resurfacing arthroplasty

Total shoulder arthroplasty

Total shoulder arthroplasty, which is also called total shoulder replacement, reduces pain in the shoulder by replacing the damaged bone and cartilage with a metal and plastic implant (cartilage is the firm, rubbery tissue that cushions bones at joints). The shoulder

Shoulder pain

joint is a ball-and-socket joint, with the ball at the top of the arm bone (the humerus) and the socket within the shoulder blade (scapula).

When you have a total shoulder replacement, you will be put to sleep with **general anaesthesia**. The surgeon removes the ball from the top of the humerus and replaces it with a metal implant. This implant is shaped like a half-moon and attached to a stem which is fixed into the centre of the arm bone. The surgeon also shaves clean the socket part of the joint and replaces it with a plastic socket that is cemented into the scapula.

Studies have found that total shoulder replacement can reduce pain and improve movement in the shoulder, which makes everyday activities easier. ^[68] ^[69] ^[70] ^[71] ^[72]

There are some risks when you have a total shoulder replacement. These include infection around the implanted joint, bleeding, loosening of the implant, damage to blood vessels and nerves, dislocation, persistent pain, and a noticeable difference in arm length.

Shoulder resurfacing arthroplasty

Shoulder resurfacing only replaces the damaged joint surfaces instead of the whole shoulder joint. You could be put to sleep with general anaesthesia, or your surgeon may decide to use **local anaesthesia** instead, which numbs the area.

The damaged joint surfaces at the head of the humerus are shaved away to restore their original shape. The joint is capped using an artificial joint surface, which is firmly attached onto the end of the bone and secured with a peg in the back of the artificial surface, which is inserted into a hole drilled into the bone. ^[73]

This is quite a new treatment, so there are not many studies on how well it works. However, a few small studies have found that having this type of surgery can help reduce pain and increase shoulder movement. ^[73]

As with all surgery, there are some risks like infection. Other risks with this kind of surgery include nerve injury, blood clots, fracture, stiffness, loosening of the artificial joint surface, and movement problems caused by the artificial joint surface being incorrectly sized. ^[73]

Further informations:

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 NSAIDs 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. ^[18]

As well as these other side effects, people who take high doses of some NSAIDs for a long time may have a slightly higher chance of getting a **heart attack** or a **stroke**. High

Shoulder pain

doses of NSAIDs may be used over a long period of time to treat conditions such as arthritis . People who have heart problems should not take diclofenac. ^[19]

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 in which people took NSAIDs for one year or longer. ^[20]

Here we look at the different kinds of NSAIDs and what the research that's 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 chances of getting a heart attack or a stroke. ^[21]

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 chances of getting a heart attack or a 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. ^[22] However, there's probably much less of a risk if you're taking low doses for short periods of time. ^[23]

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. ^{[20] [22] [24]}

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 the 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 chances of getting 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. ^[21]

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

- celecoxib (Celebrex)
- etoricoxib (Arcoxia)

Shoulder pain

- meloxicam (Mobic).

The overall risk of having a heart attack or a stroke when taking COX-2 inhibitors is fairly small. For every 1,000 people regularly taking high doses, an extra three people will have a heart attack or a stroke.^[20] 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.^[25] 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:

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

Some of these NSAIDs may slightly increase your chances of getting a heart attack or a 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.^[21]

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. 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.^[19]

We don't know exactly how big the risk is, or how it varies between the different drugs. Here's what the research that has been done so far suggests.^[21]

- Taking diclofenac has a similar risk of heart attack to taking some COX-2 inhibitors. That would mean three extra heart attacks or strokes each year for every 1,000 people taking high daily doses.
- Taking naproxen may be safer than taking COX-2 inhibitors. Most studies so far seem to show that naproxen doesn't increase people's chances of getting a heart

Shoulder pain

attack or a stroke.^[20] ^[22] 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.^[24]

Guidelines for doctors say that for most people, the benefits of these drugs outweigh the risks.^[26] The risks are probably lower for people who only take NSAIDs for a short time or take smaller doses.^[21]

Guidelines for doctors

There are guidelines for doctors about how they should prescribe COX-2 inhibitors and other NSAIDs. Here's what the guidelines say.^[21]

- You should take the lowest dose of an NSAID that works for you.
- You should only take NSAIDs for as long as you need to. If you are taking them for a long time, you should have your treatment reviewed regularly.
- If you already have heart disease, you 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 likely to get stomach problems, but not if you're at risk of having a heart attack.
- You're more likely to get stomach problems if you 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:

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.

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).

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.

general anaesthetic

Shoulder pain

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.

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.

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.

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.

tendons

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

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.

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.

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'.

heart disease

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

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.

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.

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'.

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.

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.

physiotherapy

Physiotherapy is a way of using movements or exercises to help people's bodies heal.

systematic reviews

Shoulder pain

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.

ultrasound

Ultrasound is a tool doctors use to create images of the inside of your body. An ultrasound machine sends out high-frequency sound waves, which are directed at an area of your body. The waves reflect off parts of your body to create a picture. Ultrasound is often used to see a developing baby inside a woman's womb.

laser therapy

Laser therapy is when surgeons use a laser to perform certain operations. For example, diabetes can make people grow new blood vessels in their eyes, which can affect their sight. Laser surgery can be used to remove these blood vessels.

Sources for the information on this leaflet:

1. Vecchio P, Kavanagh R, Hazleman BL, et al. Shoulder pain in a community-based rheumatology clinic. *British Journal of Rheumatology*. 1995; 34: 440-442.
2. Lundberg B. The frozen shoulder. *Acta Orthopaedica Scandinavica Supplementum*. 1969; 119: S1-S59.
3. Riordan J, Dieppe PA. Arthritis of the glenohumeral joint. *Baillieres Clinical Rheumatology*. 1989; 3: 607-626.
4. National Institute of Arthritis and Musculoskeletal and Skin Diseases. Questions and answers about shoulder problems. April 2014. Available at http://www.niams.nih.gov/Health_Info/Shoulder_Problems/default.asp (accessed on 11 August 2014).
5. Bergnund H, Lindgarde F, Nilsson B, et al. Shoulder pain in middle age. *Clinical Orthopaedics and Related Research*. 1988; 231: 234-238.
6. McCormack RR, Inman RD, Wells A, et al. Prevalence of tendinitis and related disorders of the upper extremity in a manufacturing workforce. *Journal of Rheumatology*. 1990; 17: 958-964.
7. Allander E. Prevalence, incidence and remission rates of some common rheumatic diseases or syndromes. *Scandinavian Journal of Rheumatology*. 1974; 3: 145-153.
8. Badley EM, Tennant A. Changing profile of joint disorders with age: findings from a postal survey of the population of Calderdale, West Yorkshire, UK. *Annals of the Rheumatic Diseases*. 1992; 51: 366-371.
9. Andersson HI, Ejlertsson G, Leden I, et al. Chronic pain in a geographically defined general population: studies of differences in age, gender, social class and pain localisation. *Clinical Journal of Pain*. 1993; 9: 174-182.
10. Royal College of General Practitioners; Office of Populations, Censuses and Surveys. Third national morbidity survey in general practice, 1980-1981. Department of Health and Social Security, London, UK; 1981.
11. Chard M, Hazleman R, Hazleman BL, et al. Shoulder disorders in the elderly: a community survey. *Arthritis and Rheumatism*. 1991; 34: 766-769.
12. Lundberg B. The frozen shoulder. *Acta Orthopaedica Scandinavica Supplementum*. 1969; 119: S1-S59.
13. Croft P, Pope D, Silman A. The clinical course of shoulder pain: prospective cohort study in primary care. *BMJ*. 1996; 313: 601-602.
14. Vecchio PC, Kavanagh RT, Hazleman BL, et al. Community survey of shoulder disorders in the elderly to assess the natural history and effects of treatment. *Annals of the Rheumatic Diseases*. 1995; 54: 152-154.
15. American Academy of Family Physicians. Shoulder pain. December 2010. Available at <http://familydoctor.org/familydoctor/en/prevention-wellness/exercise-fitness/injury-rehab/shoulder-pain.html> (accessed on 11 August 2014).
16. Mena HR, Lomen PL, Turner LF, et al. Treatment of acute shoulder syndrome with flurbiprofen. *American Journal of Medicine*. 1986; 80: 141-144.
17. Petri M, Hufman SL, Wasser G, et al. Celecoxib effectively treats patients with acute shoulder tendonitis/bursitis. *Journal of Rheumatology*. 2004; 31: 1614-1620.

Shoulder pain

18. British National Formulary. Non-steroidal anti-inflammatory drugs. Section 10.1.1. British Medical Association and Royal Pharmaceutical Society of Great Britain. Also available at <http://bnf.org> (accessed on 11 August 2014).
19. Medicines and Healthcare products Regulatory Agency. Press release: MHRA confirms advice on the use of diclofenac. June 2013. Available at <http://www.mhra.gov.uk> (accessed on 11 August 2014).
20. Kearney PM, Baigent C, Godwin J, et al. Do selective cyclo-oxygenase-2 inhibitors and traditional non-steroidal anti-inflammatory drugs increase the risk of atherothrombosis? *BMJ*. 2006; 332: 1302-1308.
21. Medicines and Healthcare products Regulatory Agency. Cardiovascular safety of COX-2 inhibitors and non-selective NSAIDs. July 2013. Available at <http://www.mhra.gov.uk> (accessed on 11 August 2014).
22. McGettigan P, Henry D. Cardiovascular risk and inhibition of cyclooxygenase: a systematic review of the observational studies of selective and nonselective inhibitors of cyclooxygenase 2. *Journal of the American Medical Association*. 2006; 296:1633-1644.
23. electronic Medicines Compendium. Voltarol Pain-eze tablets. March 2011. Available at <http://www.medicines.org.uk> (accessed on 11 August 2014).
24. Haag MD, Bos MJ, Hofman A, et al. Cyclooxygenase selectivity of nonsteroidal anti-inflammatory drugs and risk of stroke. *Archives of Internal Medicine*. 2008; 168: 1219-1224.
25. British National Formulary. Non-steroidal anti-inflammatory drugs: etoricoxib. Section 10.1.1. British Medical Association and Royal Pharmaceutical Society of Great Britain. Also available at <http://bnf.org> (accessed on 11 August 2014).
26. European Medicines Agency. Questions and answers on the review of non-selective NSAIDs. September 2006. Available at http://www.ema.europa.eu/docs/en_GB/document_library/Medicine_QA/2009/12/WC500017363.pdf (accessed on 11 August 2014).
27. Buchbinder R, Green S, Youd JM, et al. Oral steroids for adhesive capsulitis (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
28. Medicines and Healthcare products Regulatory Agency. Drug safety update: volume 1, issue 2, September 2007. Available at <http://www.mhra.gov.uk> (accessed on 11 August 2014).
29. Ginn KA, Herbert RD, Khouw W, et al. A randomized controlled trials of a treatment for shoulder pain. *Physical Therapy*. 1997; 77: 802-811.
30. Ryans I, Montgomery A, Galway R, et al. A randomized controlled trial of intra-articular triamcinolone and/or physiotherapy in shoulder capsulitis. *Rheumatology*. 2005; 44: 529-535.
31. Kelly SM, Wrightson PA, Meads CA. Clinical outcomes of exercise in the management of subacromial impingement syndrome: a systematic review. *Clinical Rehabilitation*. 2010; 24: 99-109.
32. Bennell K, Wee E, Coburn S, et al. Efficacy of standardised manual therapy and home exercise programme for chronic rotator cuff disease: randomised placebo controlled trial. *BMJ*. 2010; 340: 2756.
33. Brox JI, Gjengedal E, Uppheim G, et al. Arthroscopic surgery versus supervised exercises in patients with rotator cuff disease (stage II impingement syndrome): a prospective, randomised, controlled study in 125 patients with a 2 1/2 year follow-up. *Journal of Shoulder and Elbow Surgery*. 1999; 8: 102-111.
34. Green S, Buchbinder R, Hetrick S. Physiotherapy interventions for shoulder pain (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
35. Gudmundssen J, Vikne J. Laser treatment for epicondylitis humeri and rotator cuff syndrome. *Nordisk Tidskrift Idrettsmed*. 1987; 2: 6-15.
36. Vecchio P, Cave C, King V, et al. A double blind study of the effectiveness of low level laser treatment of rotator cuff tendinitis. *British Journal of Rheumatology*. 1993; 32: 740-742.

Shoulder pain

37. Santamato A, Solfrizzi V, Panza F, et al. Short-term effects of high-intensity laser therapy versus ultrasound therapy in the treatment of people with subacromial impingement syndrome: a randomized clinical trial. *Physical Therapy*. 2009; 89: 643-652.
38. Loew M, Daecke W, Kusnierczak D, et al. Shock-wave therapy is effective for chronic calcifying tendinitis of the shoulder. *Journal of Bone and Joint Surgery*. 1999; 81: 863-867.
39. Gerdesmeyer I, Wagebpefed S, Haake M, et al. Extracorporeal shock wave therapy for the treatment of chronic calcifying tendonitis of the rotator cuff: a randomized controlled trial. *Journal of the American Medical Association*. 2003; 290: 2573-2580.
40. Peters J, Luboldt W, Schwarz W, et al. Extracorporeal shock wave therapy in calcific tendinitis of the shoulder. *Skeletal Radiology*. 2004; 33: 712-771.
41. Hsu CJ, Wang DY, Tseng KF, et al. Extracorporeal shock wave therapy for calcifying tendinitis of the shoulder. *Journal of Shoulder & Elbow Surgery*. 2008; 17: 55-59.
42. Speed CA, Richards C, Nichols D, et al. Extracorporeal shock-wave therapy for tendinitis of the rotator cuff: a double-blind, randomised, controlled trial. *Journal of Bone and Joint Surgery*. 2002; 84: 509-512.
43. Thomas D, Williams R, Smith D. The frozen shoulder: a review of manipulative treatment. *Rheumatology and Rehabilitation*. 1980; 19: 173-179.
44. Hamdan TA, Al essa KA. Manipulation under anaesthesia for the treatment of frozen shoulder. *International Orthopaedics*. 2003; 27: 107-109.
45. Loew M, Heichel TO, Lehner, B. Intraarticular lesions in primary frozen shoulder after manipulation under general anesthesia. *Journal of Shoulder and Elbow Surgery*. 2005; 14: 16-21.
46. Neal JM, McDonald SB, Larkin KL, et al. Suprascapular nerve block prolongs analgesia after nonarthroscopic shoulder surgery but does not improve outcome. *Anesthesia and Analgesia*. 2003; 96: 982-986.
47. Dahan TH, Fortin L, Pelletier M, et al. Double blind randomized clinical trial examining the efficacy of bupivacaine suprascapular nerve blocks in frozen shoulder. *Journal of Rheumatology*. 2000; 27: 1464-1469.
48. Brox J, Staff P, Ljunggren A, et al. Arthroscopic surgery compared with supervised exercises in patients with rotator cuff disease (stage II impingement syndrome). *BMJ*. 1993; 307: 899-903 [erratum in: *BMJ*. 1993; 307: 1269].
49. Boulton M, Wicks M, Watson DI, et al. Arthroscopic subacromial decompression with a holmium : YAG laser: review of the literature. *Australia and New Zealand Journal of Surgery*. 2001; 71: 172-177.
50. Gartsman GM, O'Connor DP. Arthroscopic rotator cuff repair with and without arthroscopic subacromial decompression: a prospective randomized study of one-year outcomes. *Journal of Shoulder and Elbow Surgery*. 2004; 13: 424-426.
51. Coghlan JA, Buchbinder R, Green S, et al. Surgery for rotator cuff disease (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
52. Buchbinder R, Green S, Youd JM. Corticosteroid injections for shoulder pain (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
53. Kang MN, Rizio L, Prybicien M, et al. The accuracy of subacromial corticosteroid injections: a comparison of multiple methods. *Journal of Shoulder and Elbow Surgery*. 2008; 17: 61S-66S.
54. Alvarez-Nemegyei J, Bassol-Perea, Pasos JR. Efficacy of the local injection of methylprednisolone acetate in the subacromial impingement syndrome: a randomized, double-blind trial. *Clinical Rheumatology*. 2008; 4: 49-54.
55. Hay EM, Thomas E, Paterson SM, et al. A pragmatic randomised controlled trial of local corticosteroid injection and physiotherapy for the treatment of new episodes of unilateral shoulder pain in primary care. *Annals of the Rheumatic Diseases*. 2003; 62: 394-399.
56. Crette S, Moffet H, Tardif J, et al. Intraarticular corticosteroids, supervised physiotherapy, or a combination of the two in the treatment of adhesive capsulitis of the shoulder: a placebo-controlled trial. *Arthritis and Rheumatism*. 2003; 48: 829-838.

Shoulder pain

57. Ryans I, Montgomery A, Galway R, et al. A randomized controlled trial of intra-articular triamcinolone and/or physiotherapy in shoulder capsulitis. *Rheumatology*. 2005; 44: 529-535.
58. Shah N, Lewis M. Shoulder adhesive capsulitis: systematic review of randomised trials using multiple corticosteroid injections. *British Journal of General Practice*. 2007; 57: 662-667.
59. Gray RG, Gottlieb NL. Intra-articular corticosteroids: an updated assessment. *Clinical Orthopaedics*. 1983; 177: 235-263.
60. Medicines and Healthcare products Regulatory Agency. Drug safety update: volume 1, issue 4, November 2007. Available at <http://www.mhra.gov.uk> (accessed on 11 August 2014).
61. Berrazueta JR, Losada J, Poveda J, et al. Successful treatment of shoulder pain syndrome due to supraspinatus tendinitis with transdermal nitroglycerin: a double blind study. *Pain*. 1996; 66: 63-67.
62. Green S, Buchbinder R, Hetrick S. Physiotherapy interventions for shoulder pain (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
63. Buchbinder R, Green S, Youd JM, et al. Arthrographic distension for adhesive capsulitis (frozen shoulder) (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
64. Quraishi NA, Johnston P, Bayer J, et al. Thawing the frozen shoulder: a randomised trial comparing manipulation under anaesthesia with hydrodilatation. *Journal of Bone and Joint Surgery*. 2007; 89: 1197-1200.
65. Green S, Buchbinder R, Hetrick S, et al. Acupuncture for shoulder pain (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
66. Moore ME, Berk SN, Moore ME, et al. Acupuncture for chronic shoulder pain: an experimental study with attention to the role of placebo and hypnotic susceptibility. *Annals of Internal Medicine*. 1976; 84: 381-384.
67. Guerra de Hoyos JA, Andres Martin MdelC, Baena de Leon E, et al. Randomised trial of long term effect of acupuncture for shoulder pain. *Pain*. 2004; 112: 289-298.
68. Orfaly RM, Rockwood CA, Esenyel CZ, et al. A prospective functional outcome study of shoulder arthroplasty for osteoarthritis with an intact rotator cuff. *Journal of Shoulder and Elbow Surgery*. 2003; 12: 214-221.
69. Raiss P, Aldinger PR, Kasten P, et al. Total shoulder replacement in young and middle-aged patients with glenohumeral osteoarthritis. *Journal of Bone & Joint Surgery (British Volume)*. 2008; 90: 764-769.
70. Iannotti JP, Norris TR. Influence of preoperative factors on outcome of shoulder arthroplasty for glenohumeral osteoarthritis. *Journal of Bone and Joint Surgery (American Volume)*. 2003; 85: 251-258.
71. Gartsman GM, Roddey TS, Hammerman SM. Shoulder arthroplasty with or without resurfacing of the glenoid in patients who have osteoarthritis. *Journal of Bone and Joint Surgery (American Volume)*. 2000; 82: 26-34.
72. Fehring EV, Kopjar B, Boorman RS, et al. Characterizing the functional improvement after total shoulder arthroplasty for osteoarthritis. *Journal of Bone and Joint Surgery (American Volume)*. 2002; 84: 1349-1353.
73. National Institute for Health and Care Excellence. Shoulder resurfacing arthroplasty. July 2010. Interventional procedure guidance 354. Available at <http://www.nice.org.uk/ipg354> (accessed on 11 August 2014).

This information is aimed at a UK patient audience. This information however does not replace medical advice. If you have a medical problem please see your doctor. Please see our full [Conditions of Use](#) for this content. For more information about this condition and sources of the information contained in this leaflet please visit the Best Health website, <http://besthealth.bmj.com>. These leaflets are reviewed annually.

