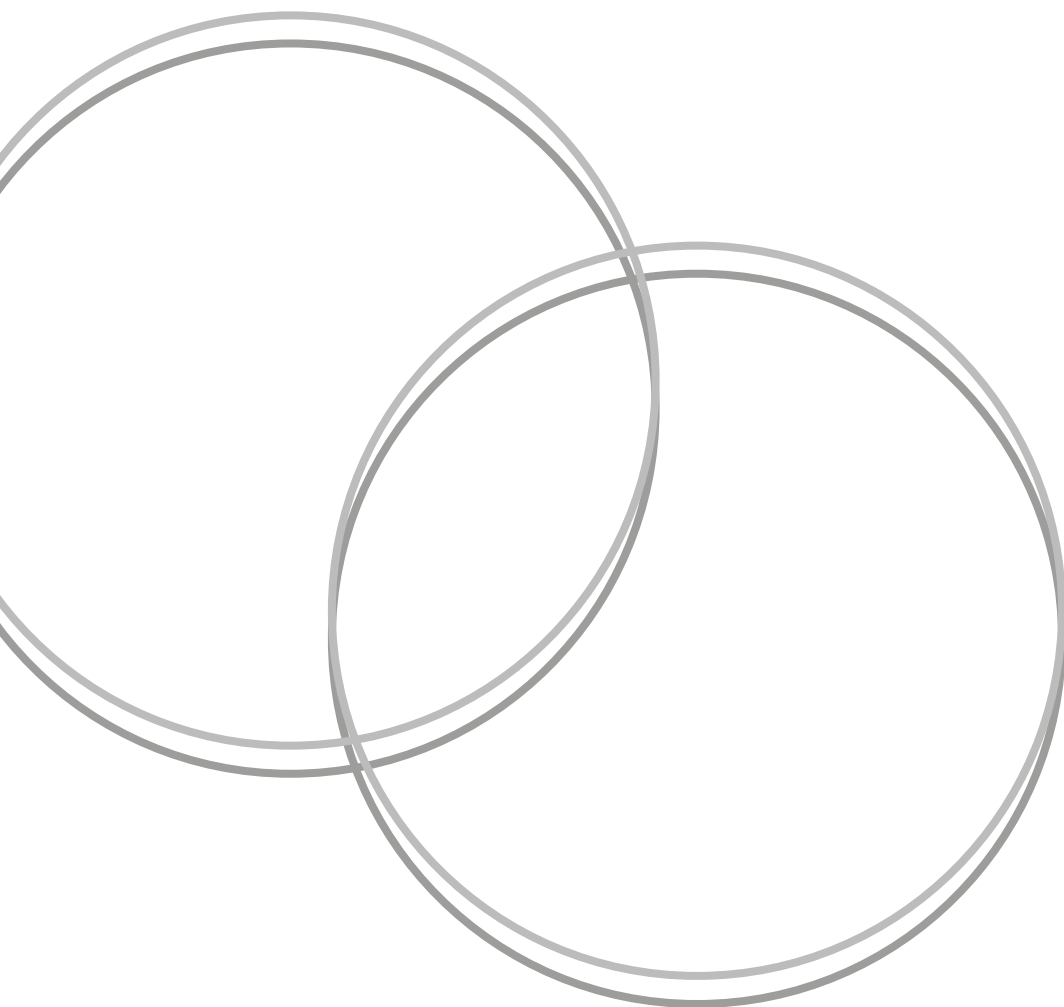


Frozen shoulder

Information for patients



This leaflet has been written to help you understand more about the problem with your shoulder. This leaflet is not a substitute for professional medical advice and should be used in conjunction with verbal information and treatment given at the Nuffield Orthopaedic Centre.

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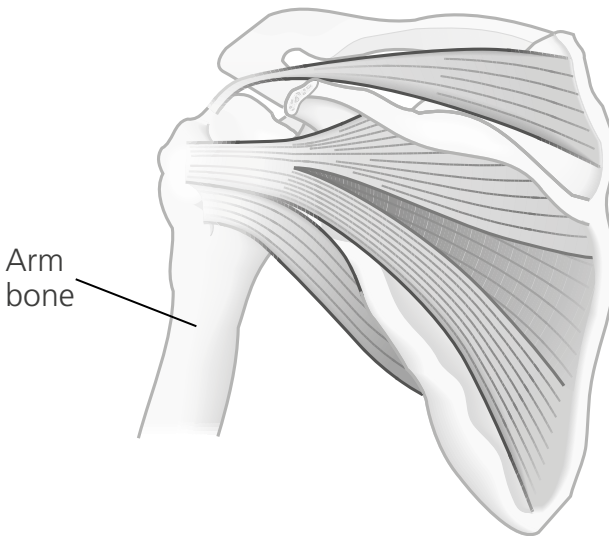
How to contact us

This leaflet contains information to help you understand the problem you have with your shoulder. We will review what we understand about a frozen shoulder, as well as your treatment options. If necessary, you may be referred to a specialist surgeon, who will talk with you about which treatment options might be available.

About your shoulder

The shoulder is designed to be very mobile, so that we can use our hands/arms in a wide range of positions. Movement also occurs between the shoulder blade and chest wall. However, most shoulder movements take place in the ball and socket joint.

The ball at the top of the arm bone (humerus) fits into the shallow socket (glenoid), which is part of your shoulder blade (scapula). There is also a loose bag, or capsule, which surrounds the joint. This is supported by ligaments and muscles.



Three of the four rotator cuff muscles attach from the back of the shoulder blade to the arm bone.

What is a 'frozen shoulder'?

A frozen shoulder typically causes the joint to feel stiff and painful. Often there is no apparent cause.

The loose bag (capsule) around the shoulder joint becomes inflamed. The capsule then appears to tighten or shrink, which combined with the pain restricts the movement.

How common is it?

It is most common in people between the ages of 40 and 70 years and has been estimated to affect around 1 in 12 men and 1 in 10 women of working age.

Up to 20% of people may develop frozen shoulder in the other shoulder within 5-7 years of the first one.

Although it is common, it is a difficult condition to treat.

We hope that this information leaflet will help to explain what we know about it so far.

Why does it occur?

A **primary frozen shoulder** is when the exact cause is not known. It is more common in people with diabetes and with a thyroid gland problem. About 15% of patients link it to a minor injury to the shoulder.

A **secondary frozen shoulder** can develop if the shoulder area is kept still for some time, for example, after a stroke or a heart attack. It can also occur after major injury or surgery to the shoulder.

Research continues to try and find the reasons as to why a frozen shoulder begins and why it affects some people and not others.

What tests may be done?

The main way we diagnose a frozen shoulder is from what you tell us, and what we observe during the examination process. Sometimes an X-ray will be done to check there are no bony changes in your shoulder joint.

What is likely to happen?

There are 3 main phases

1) Painful phase (which can last 2 to 9 months)

The pain often starts gradually and builds up. It may be felt on the outside of the upper arm and can extend down to the elbow and even into the forearm. It can be present at rest and is worse when the arm is moved. Sleep is often affected, as lying on it is painful or impossible to do. During this time movements of the shoulder begin to reduce.

2) Stiff phase (which can last from 4 to 12 months)

The ball and socket joint becomes increasingly stiff, particularly on twisting movements such as trying to put your hand behind your back or head. These movements remain tight even when you try to move the shoulder with your other hand, or someone tries to move the shoulder for you.

It is the ball and socket joint which is stiff. The shoulder blade is still free to move around the chest wall, and you may become more aware of this movement.

3) Recovery phase (which can last from 5 to 26 months)

The pain and stiffness start to resolve during this phase, and you can begin to use your arm normally.

The total duration of the process is from 12 to 42 months, on average lasting 30 months.

It is important to realise that although the pain and stiffness can be very severe, usually the problem does resolve.

A review of people who had frozen shoulder approximately 7 years earlier shows only 11% still had mild interference with everyday activities. However, 60% continued to have some stiffness in the shoulder joint at the extreme of movement when it was measured. So ultimately, it should have little effect on your daily life, although the joint may remain stiffer when tested.

Recurrence is extremely rare in the same shoulder.

What are your treatment options?

There are a number of treatments available and no single treatment option that has been shown to be the best. Therefore, treatment will be personalised to your condition.

During the ***painful phase*** the emphasis is on pain-relief. Therefore pain relief tablets and anti-inflammatory tablets may be prescribed. Injections are also quite common to help reduce the pain.

You can also try using heat, such as a hot water bottle, or cold (ice packs).

PHYSIOTHERAPY:

Physiotherapy can be helpful throughout the frozen shoulder process. The aims of physiotherapy alter as you move through the 3 phases;

1) Freezing/painful stage

Physiotherapy at this stage is directed at pain-relief (heat, cold etc.). Forcing the joint to move can make it more painful and is not advised. You can try using a TENS machine (transcutaneous nerve stimulation) which some people find helpful.

2) Frozen/stiffness stage

Once stiffness is more of the problem than pain, physiotherapy may be indicated. You can start exercises at home to try and get the ball and socket moving. Some of these exercises are shown at the end of this leaflet. In addition, a therapist may help you regain the normal glides and rolling of the joint. This treatment is known as joint mobilisations. Muscle based movement techniques may also be used.

If movement has not improved with joint mobilisation and exercises, physiotherapy will be discontinued, although it is appropriate to continue with the suggested exercises to try and maintain the movement you have.

3) Defrosting/recovery stage

Hopefully, as the recovery phase starts you will find the movement gradually increases. This can be a useful time to restart physiotherapy to help maximise movement.

Sometimes people may not recover at an acceptable rate for them, or the pain and stiffness may affect people's lives so much they wish for more aggressive treatment. These treatments may involve more therapeutic injections, manipulation of the stiff shoulder under anaesthetic, or key-hole surgery to release the stiffness.

INJECTIONS

If the pain continues you may be offered a steroid injection into the joint which can be helpful to ease the pain. These can be given in clinics and sometimes using ultrasound guidance.

Hydrodilatation Injection

Hydrodilatation is a type of injection treatment. You may be offered hydrodilatation to help improve the pain and movement in your shoulder, usually after having tried a previous injection. The procedure involves using ultrasound or x ray to guide the injection of a large amount of sterile saline, local anaesthetic and steroid into the shoulder joint. This fluid stretches the frozen lining of the joint and helps to improve the range of movement in the shoulder. The radiologist performs the procedure in the x ray department and you can go home immediately afterwards. We recommend you bring somebody along to drive you home, and wait 6 hours before operating heavy machinery

Is it safe? As with any injection there is a small risk of infection and bleeding. There is a 30% risk that it may not work. If you are taking anti-coagulants e.g. warfarin you must inform the radiology department before you have the treatment.

What might you feel? The area is numbed but you may feel some pushing or pressure sensation. If you feel discomfort during the procedure please inform the radiologist. Afterwards you may have moderate discomfort which can last for thirty minutes due to joint distension. It sometimes can be painful for a short while during and after the procedure. You can continue with physiotherapy and we would recommend you see your therapist within a week afterwards.

Does it work? Up to 70% of people notice an improvement in movement in the shoulder, and 90% an improvement in pain. It can take a few weeks to feel the full benefit, but some people have immediate relief. Depending on the severity of the frozen shoulder, you may need a repeat hydrodilatation.

SURGERY

If you have significant pain and stiffness and have not responded to injections, or hydrodilatation or you do not want injections, the doctors may offer you keyhole surgery (arthroscopic release) and a manipulation (MUA) to improve your range of movement.

Arthroscopic Release and MUA

What is involved? The tight capsule is released through keyhole surgery. The joint can then be further manipulated and stretched to try and regain maximum movement in the ball and socket joint. This is usually done under general anaesthetic.

Does it work? Up to 80% of people notice an improvement in their pain and movement. To maintain any increased movement achieved by the surgery, it is important to do the exercises that you will be shown before leaving the hospital from when the nerve block wears off and continue with them at home for at least 8-16 weeks. Improvements can still be made up to at least 4 months post surgery. Outpatient physiotherapy will be arranged to start as soon as possible. If you have not got an appointment within 1 week, please contact the Nuffield Orthopaedic Shoulder service and ask to speak to the lead shoulder physiotherapist.

What are the risks?

All operations involve an element of risk. The risks you should be aware of before and after your operation include:

- **Stiffness and/or persistent pain in/around your shoulder**
There is a 20% chance of no significant improvement.
- **Infection**
These are usually only superficial wound infections. Occasionally a deep infection may occur after the operation. Although this can be serious it is rare, affecting fewer than 1 in 100 people.
- **Damage to the nerves and blood vessels around the shoulder**
This is very rare, affecting fewer than 1 in 100 people.
- **Deep vein thrombosis (DVT) or pulmonary embolism (PE)**
This is also very rare after upper limb shoulder surgery, affecting fewer than 1 in 100 people.
- **Risks from the anaesthetic**
The chance of any complications from the general anaesthetic or block is low for most people. Your anaesthetist will discuss these with you.
- **A need to re-do the surgery.**
This occurs in about 5–10% of cases at 10 years.
- **The upper arm breaking.** This affects less than 1 in 100 people.

Please discuss these issues with the doctors if you would like further information.

Information about the nerve block

As with most anaesthetic procedures there are a few common side effects to be aware of. The side effects are temporary and not a cause for concern. They will get better when the local anaesthetic wears off within 12-48 hours.

- **Your arm will be very numb.** You may not be able to move it and your fingers may feel tingly, like you have 'pins and needles'.

You must take care of your arm whilst it is numb, as you could injure it without noticing. You should keep your arm in the sling until the block has fully worn off. Keep your arm away from extreme heat or cold.

- **The local anaesthetic can also spread to other nearby nerves.** Sometimes this causes other areas to be numb, such as your cheek, neck and ear. For similar reasons this may cause you to have a blocked nose and a droopy eyelid on the side of the operation. Your eye and cheek may be a little red, and you may have a hoarse voice or feel slightly breathless.

If any of these side effects last more than 48 hours, you should contact the on call registrar at the hospital for advice.

Are there any risks from a nerve block?

There is an extremely small risk that some of the side effects mentioned become long-lasting, but by giving you the block before your anaesthetic, with careful monitoring, we can reduce these risks even further.

There are some more significant complications, such as long lasting or permanent nerve damage in the arm/shoulder, or a delay in waking immediately after surgery (due to the spread of local anaesthetic towards the spinal cord).

Thankfully, these complications are very rare, occurring in less than 1 in 5,000 procedures. We would only recommend that you have the block if the benefit of the reduction in your pain immediately after the operation outweighed these risks.

Will my shoulder be painful?

When you wake up after your operation the nerve block will make your arm feel numb and weak for 12-48 hours. It is likely to significantly reduce or completely remove your pain, helping you recover from the worst of the pain from the operation. The blocks are normally very effective and last into the next day. Your arm will then start to return to normal sensation.

It is best to take pain relief regularly, starting them straight after the operation. Continue taking them regularly, even if you are comfortable, as the pain can sometimes return suddenly. Remember that pain relief tablets can take up to an hour to work.

On page 12 you will find information about the pain relief you should take, including how and when to take them.

Pain relief after surgery

As with most operations, it is normal to have some pain after shoulder surgery.

You should be given 2 or 3 different types of pain relief to take home. These different medications work in combination to treat pain effectively, so they should be taken as advised by a healthcare professional..

After 2 or 3 days you should try to cut down the amount of pain relief you are taking, to see if you still need them.

You will be given a prescription for more pain relief when you are discharged from hospital. Paracetamol or Ibuprofen should be purchased in a supermarket or your local pharmacy. Please see your GP for other pain relief that require prescription.

Bruising around the shoulder/upper arm and swelling in the arm is common after this surgery, but will gradually disappear over a few weeks. You may find it helpful to use an ice pack (or a packet of frozen peas) over the area. Place a damp tea towel between your skin and the ice pack, to protect your skin. Leave the ice pack on for 10-15 minutes and repeat several times a day. Until your wound has healed, cover the dressing with a large plastic bag or cling film, to prevent it from getting wet.

Do not use the ice whilst the arm is still numb. You need to check that you have full sensation in the area where you plan to place the ice pack.

What pain relief tablets will I be given?

This depends both on your operation and any side effects you may be more likely to develop as well as any pre-existing medical conditions or medication you take. The medical staff will advise you on the appropriate pain relief for you following surgery.

Paracetamol

This is an effective pain relief, particularly when taken regularly. It has a reputation for being weak, but you should not forget to take it, as it helps reduce the amount of other pain relief you need. It has very few side effects and is usually the last one you will stop taking.

Codeine (codeine phosphate)

Take this pain relief at the same time as paracetamol for maximal effect initially. As your pain improves, you can reduce the frequency and take when needed as “top-up” pain relief when paracetamol is not sufficient to control your pain. It can cause sleepiness, mild nausea and constipation. You may wish to increase the amount of fruit and fibre in your diet or take a laxative whilst you are taking codeine. It is also recommended to drink plenty of water to prevent constipation. Please ask for advice about this.

Naproxen/ibuprofen

These medications are very effective at relieving pain. They should be taken after food to prevent symptoms such as indigestion or stomach irritation. You should not take them if you have had a stomach ulcer in the past. If you have severe asthma you may have been advised to avoid taking this pain relief, as they can affect your breathing. If you don't have asthma they rarely cause breathing problems.

Morphine (Sevredol)/oxycodone

These opiate tablets are the strongest you may be provided with and work best for ‘breakthrough’ pain i.e. to be taken when required if the combination of the other regular pain relief has not worked. They can make you drowsy, nauseated or constipated. If you find these side effects troublesome you may want to stop taking these tablets, or reduce the dose. These are the pain relief which are usually stopped first after your operation.

Please remember:

- Take your pain relief regularly for the first few days after your operation, as the pain can sometimes return unexpectedly after surgery.
- Your nerve block is likely to make your arm numb and difficult to move for the night after surgery. Although this can be a strange experience, it is normal and should get better 12-48 hours after surgery.

Do I need to wear a sling?

The sling is for comfort and to protect the shoulder after the operation. Whilst the arm is numb it must be worn. Once normal sensation has returned you can take it on and off as you wish, and you do not need to have your arm strapped to your body. The therapists and nurses will show you how to take the sling on and off. You may find it helpful to wear the sling at night (with or without the body strap), particularly if you tend to lie on your side. Alternatively, you can use pillows in front of you to rest your arm upon.



This operation has been done to try and improve the movement of your shoulder, so it is best not to keep your arm in the sling once the block has worn off. Discard the sling as soon as you feel able.

Exercises

Below are some examples of exercises that are useful to stretch your shoulder. They may be changed by your therapist to ensure they are appropriate for the individual issues you are experiencing with your shoulder.

If you have had a dilatation or surgery we recommend short frequent sessions (e.g. 5-10 minutes, 4 times a day rather than one long session). Gradually increase the number of repetitions you do. The numbers stated here are a good starting point.

If you have not had surgery then do the exercises regularly, 1-2 times a day.

You may find them easier to do after a hot shower or bath. Using a hot water bottle is another alternative. Taking pain relief half an hour before starting can also help. Some people find ice packs better than heat, particularly after surgery.

- It is normal for you to feel aching or stretching sensations when doing these exercises. However severe and lasting pain (e.g. more than 30 minutes) is not recommended. Reduce the exercises by doing them less often or less forcefully. If the pain is still severe, discontinue the exercises and see your physiotherapist or doctor.

We recommend continuing with exercises for 8-16 weeks.

Please note: Raising your arm forwards often improves first. Getting your hand behind your low back appears to be the last movement to return. Do not do these movements if they are severely painful rather than stiff.

To access the exercises in video format please scan the QR code.



Pendulum



In standing or sitting, lean forwards with support.

- Let your problem arm hang down.
- Swing arm:
 - Forwards and backwards
 - Side to side
 - Around in circles (both ways)
- Repeat each movement 5-10 times.

Outward hand rotations

Sit in a chair with your arms by your side and your elbow bent up.

- Your elbows should not be resting on the arm rests, but be relaxed by your sides.
- Hold a stick and, keeping your elbow of the problem arm near your side, move the stick sideways, gently moving the hand on your problem side outwards.
- Only move your hands out as far as feels comfortable. Gradually increase how far you move.
- Repeat 5 times.



Arm overhead raises



Lying on your back on the bed or the floor.

- Clasp your hands together in front of your lower body.
- Lift your problem arm with your other arm. Keep your problem arm as relaxed as possible.
- Try to gradually lift it over your head.
- Repeat 5 times.



Twisting outwards/arms overhead



Lying on your back, knees bent and feet flat

- Place hands behind neck or head, elbows to the ceiling.
- Let elbows fall outwards and fold for 3-5 seconds.
- Return to the start position.
- Repeat 5 times.

Kneeling on all fours



Keep your hands still

- Gently sit back towards your heels and hold for 5-10 seconds.
- To progress take your knees further away from your hands.
- Repeat 5 times.

Worktop slides



Sitting or standing

- Place a small towel on a table or work top.
- Rest your hands on the towel.
- Gently push the towel forwards as far as feels comfortable, hold it for 5 secs.
- Return to the start position by sliding back.
- Repeat 5 times.

Pulley

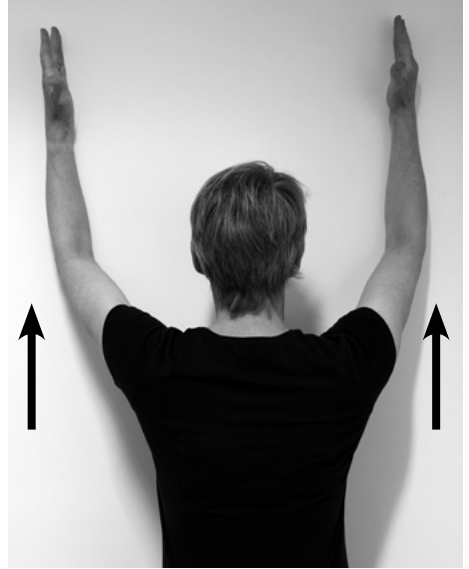


Set up a pulley system, with the pulley or ring high above and behind you.

- Sit or stand under the pulley system.
- Holding the ends, pull down with your unaffected arm, to help lift your problem arm upwards.
- Slowly lower it back down.
- Repeat 10 times.

Note: You can buy door pulleys on the internet or in the League of Friends shop at the Nuffield Orthopaedic Centre.

Wall Slides



Stand facing the wall.

- Place your little fingers on the wall, with your thumbs pointing backwards.
- Slide your arms up the wall as far as is comfortable and then slide back down.
- Repeat 5-10 times.

Stretching the back of the shoulder



Standing or sitting

- Take the hand of your problem shoulder across your body towards the opposite shoulder.
- Give a gentle stretch by pulling with your uninvolved arm at the elbow.
- Sometimes you can feel more stretch if you lie on your back to do the movement.
- Repeat 5 times, holding for 20 seconds.

Hand behind back slide ups



Stand with your arms by your side.

- Put your hand behind your back.
- Grasp the wrist of your problem arm with your other hand.
- Gently slide your hands up and down your back.
- Repeat 5 times.
- Do not force the movement.

Remember this is often the last movement to return – do not force the movement if it is painful, rather than stiff.

Contact details

If you have any problems or questions at any stage in your rehabilitation, please ask your physiotherapist for advice.

Nuffield Orthopaedic Centre

Oxford University Hospitals NHS Foundation Trust
Windmill Road
Headington
Oxford
OX3 7LD

Nuffield Orthopaedic Centre Physiotherapy Reception:
01865 738 074

Trauma Service

John Radcliffe Hospital
Oxford University Hospitals NHS Foundation Trust
Headley way
Oxford
OX3 9DU

John Radcliffe Trauma Service Physiotherapy Reception:
01865 221 540

Horton General Hospital

Oxford University Hospitals NHS Foundation Trust
Oxford Road
Banbury
OX16 9AL

Physiotherapy Reception:
01295 229432

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

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Oxford University Hospitals NHS Foundation Trust
www.ouh.nhs.uk/information



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