NHS
Grampian

SHOULDER IMPINGEMENT:

Information for patients to help in making decisions about treatment

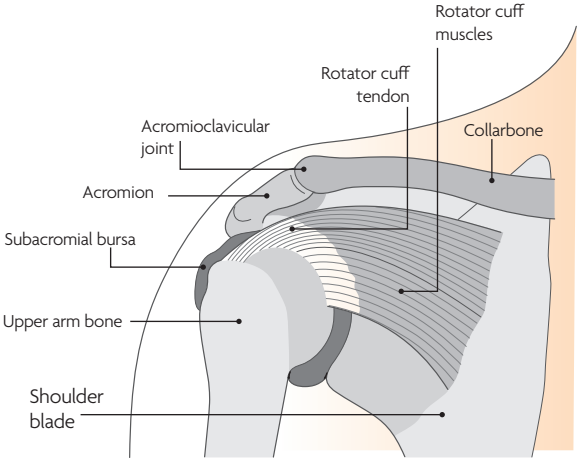
About the shoulder

There are three bones which together make up the shoulder;

1. The upper arm bone (humerus)
2. The shoulder blade (scapula)
3. The collarbone (clavicle)

The upper arm bone (humerus) and the shoulder blade (scapula) create the main 'ball and socket' shoulder joint. A group of four tendons and muscles (known as the rotator cuff) joins the upper arm bone to the shoulder blade to form this main shoulder joint.

The rotator cuff, since it joins the upper arm bone and shoulder blade, is therefore important for lifting and twisting your arm, and for that reason keeping the shoulder stable.



What is shoulder impingement?

Shoulder impingement is when the rotator cuff (particularly the supraspinatus, one of the four tendons) rubs against the upper part of the shoulder blade (acromion) when you raise your arm. This can slowly begin to weaken the shoulder. Symptoms of shoulder impingement include;

- Pain especially when you raise your arm above your head or out to the side
- Pain felt at the front of your shoulder
- Difficulty lying on the shoulder while sleeping as a result of discomfort or pain
- The feeling of weakness in your arm

How does shoulder impingement occur?

The rotator cuff tendons join the upper arm bone (humerus) and the shoulder blade (scapula) by wrapping around the 'ball and socket' shoulder joint. Together, the upper part of the shoulder blade (acromion) and a ligament known as the coraco-acromial form an arch. The rotator cuff tendons pass beneath this arch through an area called the subacromial space.

Raising your arm causes this space under the arch (subacromial space) to narrow. Due to this narrowing space, the movement of raising your arm can cause the rotator cuff to be squeezed or rubbed against the upper part of the shoulder blade (acromion). This is usually because of a change in the way your shoulder is moving. However, this does not necessarily mean that shoulder problems will result, but only that it is easier for a tendon to become irritated.

Causes of shoulder impingement

- Raising your arm while carrying out general day-to-day activities can lead to some level of impingement. It is, however, through repeatedly carrying out activities which involve raising your arm (such as playing tennis), age-related 'wear and tear' or the impact from an injury that can make it more likely for the rotator cuff tendons to become swollen, thickened, or irritated.
- Reduction in the space under the arch (subacromial space) when your arm is raised, creating a greater chance for impingement, can occur as a result of;

Swelling of the bursa

- A fluid-filled sac (bursa) cushions and protects the rotator cuff in the area under the arch. The upper part of the shoulder blade (acromion) and the upper arm bone (humerus) can rub slightly when your arm is raised. Due to the location of the bursa between these two bones, this can cause it to become swollen (known as bursitis), creating less space for the rotator cuff to pass under the arch.

Bone spurs on the upper part of the shoulder blade (acromion)

- 'Wear and tear' (for example, with arthritis) or injury to the acromioclavicular joint (ACJ) can lead to bone spurs (small jagged points of bone) developing. The ACJ joint is found between the collar bone (clavicle) and the upper part of the shoulder blade (acromion), right above the rotator cuff. Bone spurs on the acromion mean that there is less space under the arch for the rotator cuff to pass through.

Curving or tilting of the upper part of the shoulder blade (acromion)

- Sometimes the acromion can be curved or tilted when it should be flat. This reduces the space under the arch, giving a great chance of the acromion and rotator cuff rubbing.

Treating shoulder impingement

Without any treatment it is more likely for the shoulder impingement to get worse, which could lead to more pain. There is a greater chance of the shoulder muscles weakening, reducing the range of shoulder movement which would likely impact upon your day-to-day activities.

Paracetamol or anti-inflammatory painkillers (such as ibuprofen) can help to ease and control your pain symptoms. GPs may be able to prescribe stronger painkillers if necessary.

What are the treatment options for shoulder impingement?

1. Physiotherapy

Rest is important but it is equally important not to stop moving your shoulder completely. Ice packs can help when resting, while gentle movements can help to ensure the shoulder does not become weak. Physiotherapists will guide you through tailored shoulder exercises and more general changes to activities (e.g. sports adjustments and posture).

Through exercises and other treatment methods, a physiotherapist would work with you to improve the strength in your shoulder muscles and adapt the way in which you carry out activities. Building muscle strength and control enables an increase in your range of movement, less pain and helps to improve your shoulder function.

After meeting with a physiotherapist, you would continue to work on the exercises and other changes at home. To benefit from the physiotherapy, it usually takes a regular commitment to the exercises and general changes for 3 months.

Side effect of physiotherapy:

- Pain as a result of exercising may occur, however this is expected when the muscle is being worked and should be short-lived. Painkillers will help to reduce this pain, as well as applying heat (for example, with a heat pillow or water bottle) and using ice packs.

2. Steroid injection (also known as corticosteroid injection)
This involves an injection into your shoulder to inject steroid (a man-made type of hormone) into the area of pain and discomfort. This can help to ease the pain and stiffness felt in the shoulder.

It can be carried out using ultrasound guidance (gel is placed on your skin and an instrument is rubbed over the gel to generate an image on a screen to see the soft tissue, including the rotator cuff) in order to direct the injection at the exact area within the shoulder.

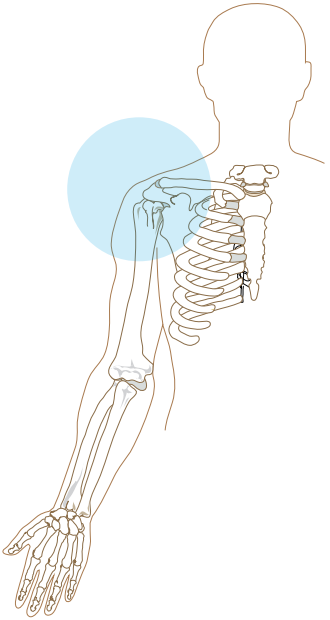
A steroid injection can help to ease shoulder pain if exercise has not helped. Typically, after a 24 hour period of rest, you should gradually be able to return to day-to-day activities. However, while the injection provides a period of pain relief, physiotherapy is required during this time to build up muscle strength, as the effect of an injection tends to weaken generally after around 6-12 weeks. Stopping with any exercises after having the injection may result in the pain returning.

Possible risks and side effects of having a steroid injection:

- It is possible to repeat steroid injections, however, too many injections are not good for the tendons
- A flare up of pain for a week after the injection is not unusual
- Most patients experience pain and discomfort in the shoulder for a couple of days after the injection
- Temporary bruising or bleeding (particularly if you take blood thinning medication, such as warfirin)
- Infection (noticeable by redness, swelling and pain)
- Paler skin and dimples where the injection was given – this could be permanent
- Blood sugar levels may increase for a few days if you are diabetic
- Blood pressure may increase for a few days if you have high blood pressure
- Allergic reaction (anaphylactic shock) – extremely rare

3. Surgery – subacromial decompression

Shoulder impingement can improve within a few months with the above non-surgical treatment options, however, occasionally if the process of impingement cannot be helped or eased through medication, physiotherapy, or a steroid injection then a surgical option may be suggested.



What does the operation involve?

The surgical option for shoulder impingement is known as subacromial decompression. This involves reducing the pressure of the rotator cuff on the upper part of the shoulder blade (acromion). Reducing the pressure widens the area around the rotator cuff tendon (the supraspinatus), so it should have more room under the shoulder arch to be able to move more freely. The pressure is reduced by removing any tissue and smoothing the under surface of the acromion bone. The procedure is carried out under general anaesthetic (you will be asleep) and is done arthroscopically (keyhole surgery – the surgeon uses a telescope and surgical instruments placed into the shoulder through a few small cuts to carry out the operation).

After the operation

You will experience a degree of pain after the operation, but this is typical until the shoulder has fully healed. It is expected that patients engage in a process of rehabilitation after the operation, as recovery takes several months. This would involve committing to physiotherapy for several months after the surgery. Most patients experience an improvement in 6 weeks, but there is a need to continue with an exercise regime for many more months.

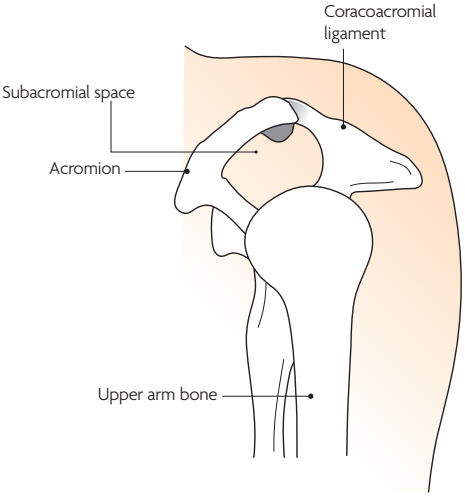
It is important to engage in gentle exercise as soon as possible after the surgery, yet this needs to be carefully considered in order to protect the shoulder which will be healing. Physiotherapy will help with this.

Risks and side effects of the operation

All surgeries can involve an element of risk, below are the risks associated with this operation.

- There is a risk that the operation might not help.
- Approximately 1 in 20 patients develop frozen shoulder (when the shoulder lining of the 'ball and socket' joint becomes inflamed, thick and tight which tends to restrict shoulder movements and cause a build up of pain and stiffness) or need further surgery.
- Anaesthetic risks; 1 in 100 patients have sickness and nausea. Less than 1 in 100 patients have more serious complications such as cardiac, respiratory or neurological problems.
- Complications such as infection, excessive bleeding, blood clots and nerve or blood vessel injury are rare but may occur in less than 1 in 100 patients.

Right arm seen from the side



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