



## Ultrasound guided shoulder hydrodilatation for treatment of frozen shoulder Patient information leaflet

### What is Frozen shoulder?

Frozen shoulder (or adhesive capsulitis) is a condition where there is generalised inflammation of the shoulder joint capsule (the soft tissues that surround the shoulder joint). It can happen secondary to various causes including trauma and surgery, and it is also more common in people who have diabetes but sometimes no obvious cause is found. It is more common in people over the age of 40.

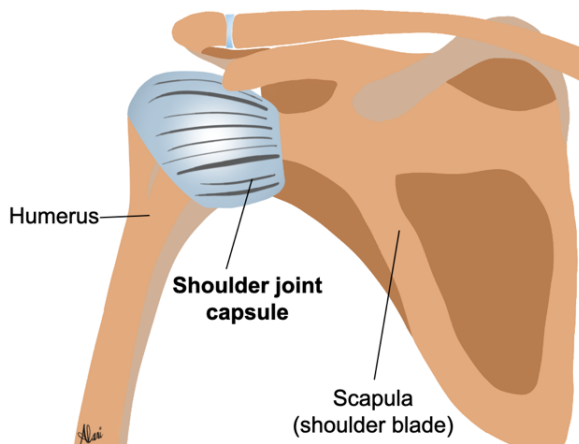
### What are the symptoms of Frozen shoulder?

- Patients usually experience severe pain and significant reduction of shoulder movements, which can be limiting to simple daily activities.
- Patients may also have shoulder pain at night that can disrupt their sleep.
- Usually the symptoms improve without treatment but this can take a long time (up to a few years).

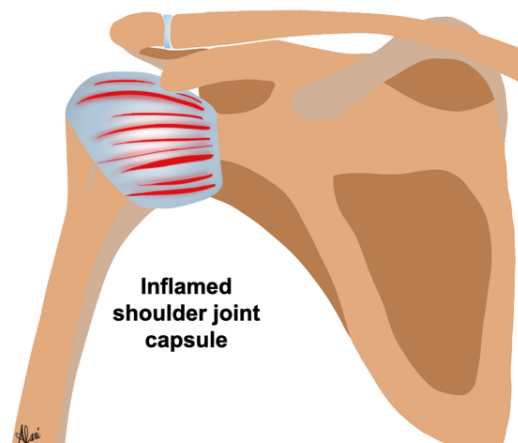
### How is frozen shoulder diagnosed?

Frozen shoulder is generally a clinical diagnosis. Imaging is mainly done to rule out other causes for shoulder pain like rotator cuff tear, shoulder osteoarthritis and shoulder calcification (calcific tendonitis). An X-ray will be normal in frozen shoulder. MRI can be helpful in the diagnosis as it can show some signs suggestive of frozen shoulder changes like capsular thickening and inflammation. Ultrasound and MRI can assess for presence of rotator cuff tear or subacromial bursitis.

#### Normal shoulder joint capsule



#### Frozen shoulder (adhesive capsulitis)





## What is shoulder hydrodilatation?

Hydrodilatation or hydrodistension is a special procedure used to treat frozen shoulder/adhesive capsulitis. It can be considered if simple treatments (like physiotherapy and anti-inflammatory tablets) are not effective.

It involves injecting a high volume of sterile (clean) water with steroids and numbing medications inside the shoulder joint. This aims to distend the inflamed and thickened joint capsule and to reduce the inflammation via the steroids. Hydrodistension needs to be done under imaging guidance (either ultrasound or x-ray/fluoroscopy). Evidence is encouraging and currently hydrodistension is an established treatment for the management of frozen shoulder. It is important to follow shoulder hydrodistension procedure by a specialist physiotherapy program to enhance the results of the procedure.

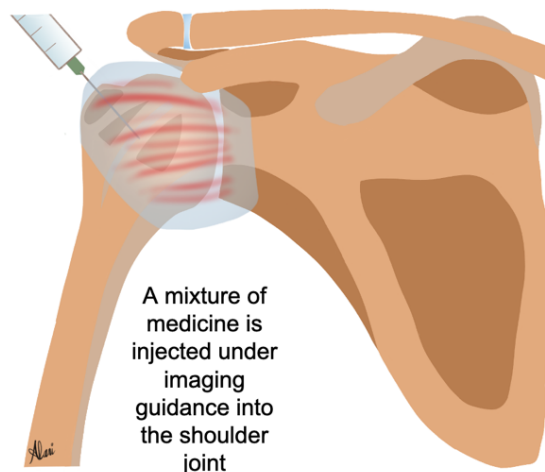
## What is ultrasound?

Ultrasound is high frequency sound waves produced by a special machine. They can penetrate the skin providing very useful images of the deep tissues within the body. It is a harmless way of imaging and it is extremely useful in assessing various musculoskeletal conditions that can involve tendons, muscles, joints and the adjacent soft tissues. Unlike x-rays, ultrasound does not involve exposure to radiation or any harmful side effects.

## What is steroid/cortisone?

Steroids are one of the important medications injected into the shoulder joint during a hydrodilatation procedure. They are anti-inflammatory medicines that can help relieve pain and inflammation. The commonly used types of steroid injections are hydrocortisone, triamcinolone (Kenalog) and methylprednisolone (Depo-medrone).

## Shoulder hydrodilatation





### **How is shoulder hydrodilatation done?**

Your doctor will speak to you on the day about the procedure. It involves injecting a high volume of sterile (clean) water with steroids and numbing medications inside the shoulder joint. If the procedure is done under ultrasound guidance, then the injection is usually done to the back of the shoulder. Your doctor will tell you about the appropriate position but it is usually done either sitting on the couch with your back towards the doctor, or lying on your side (lying on the other shoulder). In both cases, your doctor will usually ask you to put your hand across on your chest to increase the space at the back of the shoulder.

Your doctor will clean the skin and prepare the area, and numbing medication can be administered to the skin using a small needle. Then, a needle will be inserted into the shoulder joint under imaging guidance and the medication will be injected slowly into the shoulder joint.

### **What to expect during/after shoulder hydrodistension?**

You may feel a gradual build-up of pressure inside the shoulder. This is expected as shoulder hydrodistension involves injecting a high volume of water into the joint. Your doctor will keep checking on you during the procedure. Some patients may feel pressure going down the arm and the hand. When the procedure is done, your shoulder might feel heavy and tight for a few days. A small plaster is usually applied to the site of injection. You can remove this later during the same day. You can eat and drink normally before and after the procedure. You can shower as usual but avoid very hot showers/steam rooms. You can use simple painkillers like paracetamol, if you experience pain at the site of injection. It's advised not to drive immediately after the procedure. Rest the area and avoid extraneous activities for at least 48 hours after the procedure.

### **How long does shoulder hydrodistension procedure take?**

The length of the procedure depends on the difficulty of the case and the experience of the doctor. Usually, 30 minutes is a reasonable time for the whole procedure (including explanation to the patient and preparation).

### **Can shoulder hydrodistension procedure be repeated?**

The answer is yes. We can consider repeating the procedure after a few months in cases of severe frozen shoulder, when the response from one procedure is not adequate. It is important to follow shoulder hydrodistension procedure by a specialist physiotherapy program to enhance the results of the procedure.



## **What are the possible complications of shoulder hydrodistension?**

The complications are very rare in general. They are similar to having a steroid injection to the shoulder joint. These include:

- Pain and discomfort for a few days. This is sometimes referred to as a “steroid flare”. Simple painkillers like paracetamol can help with this.
- Temporary bruising due to small blood collection under the skin at the site of injection.
- “Infection” is very rare but important to be aware of. It is reported to happen in less than 1 in 10000 of the cases. The symptoms of infection are pain, swelling and redness at the site of injection. Sometimes patients may develop a fever. Get medical advice as soon as possible if you have these symptoms.
- If you have diabetes, your blood sugar level may temporarily increase, secondary to the steroid component.
- If you have high blood pressure, your blood pressure may temporarily increase.
- Temporary facial flushing.
- Other side effects like mood changes, increased appetite, difficulty in sleeping and menstrual disturbance are very rare.

A specialist musculoskeletal radiologist consultant will see you on the day, discuss the procedure with you and address your questions. You can find more information about your procedure on our website [www.mskultrasoundinjections.co.uk](http://www.mskultrasoundinjections.co.uk)



## **Steroids injections and COVID 19**

Steroid injections may reduce a person's immunity for 2-4 weeks following injection. The reduction in immunity for most people is likely to be small and it is unclear if this has any impact on their risk of contracting COVID-19. The emerging data now suggests that the risks are probably very low.

The British Society of Rheumatology have published their guidelines on 20th November 2020 regarding the treatment of patients using corticosteroid injections to support clinicians and patients in the clinical decision making.

The aim of ultrasound guided intra-articular injections is to deliver a small and effective dose of the medicine accurately and directly into the site of pain, thus minimising the side effects.

However, there remains a theoretical risk that a steroid injection could:

- Increase the likelihood of contracting COVID-19 due to its immunosuppressant effect
- Reduce the body's ability to fight the COVID-19 virus
- Potentially make the patients more contagious to people around them, following a corticosteroid injection.

We screen our patients for any high-risk factors for COVID-19 (patients over the age of 70, BMI>40, BAME, diabetes, ischaemic heart disease, chronic respiratory disease or hypertension).

Because the size of risk is unknown, it is recommended that patients and clinicians should reach a shared decision weighing up the risks and benefits of proceeding with steroid injection treatment.