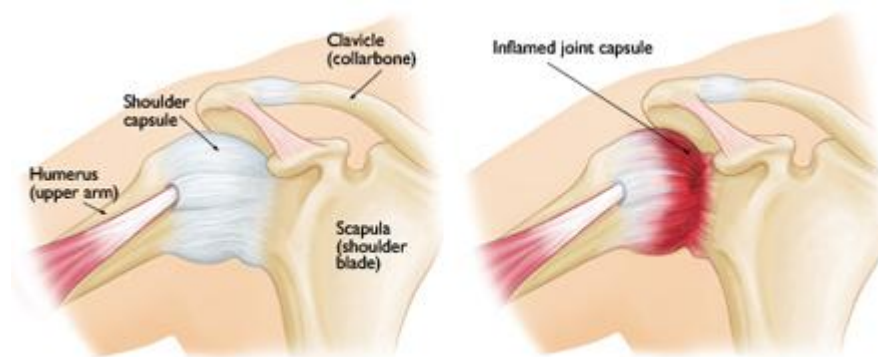


## Frozen Shoulder

### What is frozen shoulder?

Frozen shoulder, also called adhesive capsulitis, causes pain and stiffness in the shoulder. Over time, the shoulder becomes very hard to move.

Frozen shoulder occurs in about 2% of the general population. It most commonly affects people between the ages of 40 and 60 and occurs in more in females compared to males.



In frozen shoulder, the smooth tissues of the shoulder capsule become thick, stiff, and inflamed.

Your shoulder is a ball-and-socket joint made up of three bones: your upper arm bone (humerus), your shoulder blade (scapula), and your collarbone (clavicle). The head of the upper arm bone fits into a shallow socket in your shoulder blade. Strong connective tissue, called the shoulder capsule, surrounds the joint. To help your shoulder move more easily, synovial fluid lubricates the shoulder capsule and the joint.

In frozen shoulder, the shoulder capsule thickens and becomes tight. Stiff bands of tissue — called adhesions — develop. In many cases, there is less synovial fluid in the joint.

### What are the symptoms of frozen shoulder?

Pain from frozen shoulder is usually dull or aching. It is typically worse early in the course of the disease and when you move your arm. The pain is usually located over the outer shoulder area and sometimes the upper arm. For some people, the pain worsens at night, sometimes disrupting sleep.

Frozen shoulder typically develops slowly, and in three stages. Each stage can last a number of months. The 3 stages are:

- 1) **Freezing stage.** Any movement of your shoulder causes pain, and your shoulder's range of motion starts to become limited.
- 2) **Frozen stage.** Pain may begin to diminish during this stage. However, your shoulder becomes stiffer, and using it becomes more difficult.
- 3) **Thawing stage.** The range of motion in your shoulder begins to improve.

## What are the causes of frozen shoulder?

The causes of frozen shoulder are not fully understood. There is no clear connection to arm dominance or occupation. A few factors may put you more at risk for developing frozen shoulder:

- **Diabetes:** Frozen shoulder occurs much more often in people with diabetes, affecting 10% to 20% of these individuals. The reason for this is not known.
- **Other diseases:** Some additional medical problems associated with frozen shoulder include hypothyroidism, hyperthyroidism, Parkinson's disease, and cardiac disease.
- **Immobilization:** Frozen shoulder can develop after a shoulder has been immobilized for a period of time due to surgery, a fracture, or other injury. Having patients move their shoulders soon after injury or surgery is one measure prescribed to prevent frozen shoulder.

## What are the risk factors of frozen shoulder?

Factors that may increase your risk of developing frozen shoulder include:

- **Age:** People 40 and older, particularly women, are more likely to have frozen shoulder
- **Immobility or reduced mobility:** People who've had prolonged immobility or reduced mobility of the shoulder are at higher risk of developing frozen shoulder. Immobility may be the result of many factors, including rotator cuff injuries, broken arm, stroke and post surgery recovery.
- **Systemic diseases:** Having diabetes, hyperthyroidism, hypothyroidism, cardiovascular diseases, tuberculosis and Parkinson's disease can increase your risk of frozen shoulder

## How is frozen shoulder diagnosed?

After discussing your symptoms and medical history, your doctor will examine your shoulder. Your doctor will move your shoulder carefully in all directions to see if movement is limited and if pain occurs with the motion. The range of motion when someone else moves your shoulder is called "passive range of motion." Your doctor will compare this to the range of motion you display when you move your shoulder on your own ("active range of motion"). People with frozen shoulder have limited range of motion both actively and passively.



Your doctor will test the range of motion in your shoulder.

### *Imaging Tests*

Other tests that may help your doctor rule out other causes of stiffness and pain include:

- **X-rays:** Dense structures, such as bone, show up clearly on x-rays. X-rays may show other problems in your shoulder, such as arthritis.
- **Magnetic resonance imaging (MRI) and ultrasound.** These studies can create better images of problems with soft tissues, such as a torn rotator cuff.

## How is frozen shoulder treated?

Most frozen shoulder treatment involves controlling shoulder pain and preserving as much range of motion in the shoulder as possible. Frozen shoulder generally gets better over time, although it may take up to 3 years.

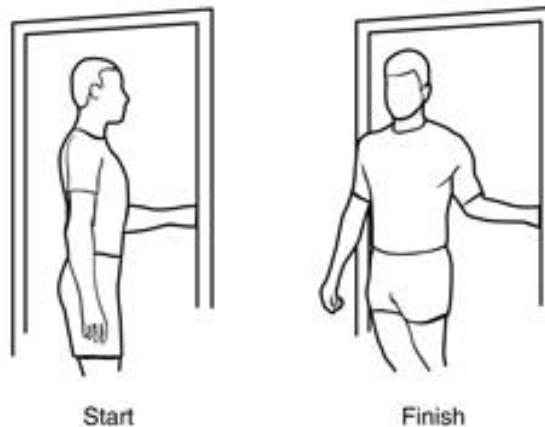
## Medications

Doctors may prescribe non steroidal anti-inflammatory drugs such as aspirin, arcoxia, celebex, voltaren and ibuprofen to help reduce pain and inflammation associated with frozen shoulder.

## Physiotherapy

A physiotherapist can teach you range-of-motion exercises to help recover as much mobility in your shoulder as possible. Your commitment to doing these exercises is important to optimize recovery of your mobility.

- **External rotation — passive stretch.** Stand in a doorway and bend your affected arm 90 degrees to reach the doorjamb. Keep your hand in place and rotate your body as shown in the illustration. Hold for 30 seconds. Relax and repeat.



External Rotation - Passive

Stretch

- **Forward flexion — supine position.** Lie on your back with your legs straight. Use your unaffected arm to lift your affected arm overhead until you feel a gentle stretch. Hold for 15 seconds and slowly lower to start position. Relax and repeat.



### Forward Flexion - Supine Position

- **Crossover arm stretch.** Gently pull one arm across your chest just below your chin as far as possible without causing pain. Hold for 30 seconds. Relax and repeat.



Crossover Arm Stretch

## Surgical and other procedures

Most frozen shoulders get better on their own within 12 to 18 months. The goal of surgery for frozen shoulder is to stretch and release the stiffened joint capsule. The most common methods include manipulation under anesthesia and shoulder arthroscopy.

For persistent symptoms, your doctor may suggest:

- **Steroid injections:** Injecting corticosteroids into your shoulder joint may help decrease pain and improve shoulder mobility, especially in the early stages of the process.
- **Joint distension:** Injecting sterile water into the joint capsule can help stretch the tissue and make it easier to move the joint.
- **Shoulder manipulation under anaesthesia:** During this procedure, you are put to sleep. Your doctor will force your shoulder to move which causes the capsule and scar tissue to stretch or tear. This releases the tightening and increases range of motion.

- **Surgery:** Surgery for frozen shoulder is rare, but if nothing else has helped then your doctor may recommend surgery to remove scar tissue and adhesions from inside your shoulder joint. Doctors usually perform this surgery with lighted, tubular instruments inserted through small incisions around your joint (arthroscopically). After surgery, physiotherapy is necessary to maintain the motion that was achieved with surgery. Recovery times vary, from 6 weeks to three months. Although it is a slow process, your commitment to therapy is the most important factor in returning to all the activities you enjoy. Long term outcomes after surgery are generally good, with most patients having reduced or no pain and greatly improved range of motion. In a few cases however, even after several years, the motion does not return completely and a small amount of stiffness remains



These photos taken through an arthroscope show a normal shoulder joint lining (**left**) and an inflamed joint lining damaged by frozen shoulder.

## Lifestyle and home remedies

Continue to use the involved shoulder and extremity as much as possible given your pain and range-of-motion limits. Applying heat or cold to your shoulder can help relieve pain.

One of the most common causes of frozen shoulder is the immobility that may result during recovery from a shoulder injury, broken arm or a stroke. If you've had an injury that makes it difficult to move your shoulder, talk to your doctor about exercises you can do to maintain the range of motion in your shoulder joint.

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