

## Frozen Shoulder

### Description

Frozen shoulder (adhesive capsulitis) is a disorder characterized by pain and loss of motion or stiffness in the shoulder. It affects about two percent of the general population. It is more common in women between the ages of 40 years to 70 years old. The causes of frozen shoulder are not fully understood. The process involves thickening and contracture of the capsule surrounding the shoulder joint. A doctor can diagnose frozen shoulder based on the history of the patient's symptoms and physical examination. X-rays or MRI (magnetic resonance imaging) studies are sometimes used to rule out other causes of shoulder stiffness and pain, such as rotator cuff tear.

### Risk Factors/Prevention

Frozen shoulder occurs much more commonly in individuals with diabetes, affecting 20 percent of these individuals. Other medical problems associated with increased risk of frozen shoulder include: hypothyroidism, hyperthyroidism, Parkinson's disease, and cardiac disease or chest surgery. Frozen shoulder can occasionally develop after a shoulder is injured or immobilized for a period of time. Attempts to prevent frozen shoulder include early motion of the shoulder after it has been injured.

### Symptoms

Pain due to frozen shoulder is usually dull or aching. It can be worsened with attempted motion. The pain is usually located over the outer shoulder area and sometimes the upper arm. The hallmark of the disorder is restricted motion or stiffness in the shoulder. The affected individual cannot move the shoulder normally. Motion is also limited when someone else attempts to move the shoulder for the patient. Some physicians have described the normal course of a frozen shoulder as having three stages:

Stage one: In the "freezing" stage, which may last from six weeks to nine months, the patient develops a slow onset of pain. As the pain worsens, the shoulder loses motion.

Stage two: The "frozen" stage is marked by a slow improvement in pain, but the stiffness remains. This stage generally lasts four months to nine months.

Stage three: The final stage is the "thawing", during which shoulder motion slowly returns toward normal. This generally lasts five months to 26 months.

The typical frozen shoulder will run its course over 18-24 months. Most people will not have significant residual loss of range of motion. Diabetic people have a longer course and poorer recovery in general.

### Treatment Options

Treatment is aimed at pain control and restoration of motion. The first goal is pain control. This can be achieved with anti-inflammatory medications. These include pills taken by mouth, such as ibuprofen or Naprosyn, as well as injections, such as corticosteroids. Narcotic medications are best avoided.

To restore motion, physical therapy is usually started. Two to four visits with a physical therapist are generally recommended to institute an independent home program. Therapy includes stretching or range-of-motion exercises for the shoulder. Sometimes heat is used to help decrease pain. Examples of some of the exercises that might be recommended can be seen in figures 1, 2, and 3.

If these methods fail, and no progress is made after 4-6 months of diligent exercises, arthroscopic release of the tight capsule is an option. More than 90 percent of patients improve with these relatively simple treatments. Usually, the pain resolves and motion improves. However, in some cases, even after several years the motion does not return

completely and a small amount of stiffness remains. In the long run, this small loss of motion does not seem to cause functional limitations.

### **Treatment Options: Surgical**

Surgical intervention is considered when there is no improvement in pain or shoulder motion after an appropriate course of physical therapy and anti-inflammatory medications. When more invasive measures are considered, the patient must always consider that most individuals will get better if given sufficient time and that surgery always has risk involved.

Surgical intervention is aimed at releasing the contracted joint capsule of the shoulder. The most common methods include shoulder arthroscopy, or commonly in the past, manipulation.

Manipulation under anesthesia involves putting the patient to sleep and “manipulating” or forcing the shoulder to move. This process causes the capsule to stretch or tear. This has the increased risk of breaking the arm, tearing the rotator cuff and nerve injuries.

With shoulder arthroscopy, Dr. Norberg makes several small incisions around the shoulder. A small camera and instruments are inserted through the incisions. Instruments are used to cut through the tight portions of the joint capsule. A small catheter is left in place after the end of the case to drip novacaine into the joint for the next three days to control pain and allow people to maintain their regained range of motion.

Manipulation and arthroscopy may be used together in combination to obtain maximum results. Most patients have very good results with these procedures. After surgery, physical therapy is important to maintain the motion that was achieved with surgery. Recovery time varies. Some patients require 2-4 weeks off of work depending on their occupation and speed of recovery.

### **Research on the Horizon/ What’s New?**

Although several theories exist, the cause of frozen shoulder is not known. Adhesive capsulitis likely has several causes. Further research is needed to determine its exact cause. If the cause could be determined, better preventative measures or treatments could be developed. Most patients affected by frozen shoulder do get better with time. Many surgeons have reported the results of various physical therapy regimes as well as surgery. Further research will determine which treatments work best, or if treatment changes the normal course of the disease.