

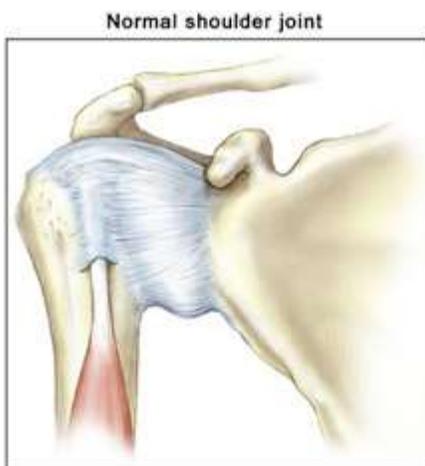
## Overview

Shoulder instability develops in two different ways: **traumatic** onset (related to a sudden injury) or **atraumatic** onset (not related to a sudden injury). Understanding the differences is essential in choosing the best course of treatment. As a rule, the patient with **atraumatic onset instability** has general **laxity**(looseness) in the joint that eventually causes the shoulder to become unstable, whereas traumatic onset instability begins when an injury causes a shoulder to develop recurrent (repeated) dislocations.

**Atraumatic shoulder instability, also called multidirectional instability (MDI), is described as laxity of the shoulder's glenohumeral joint in multiple directions.**

### What does the inside of the shoulder look like?

The shoulder is the most mobile joint in the human body with a complex arrangement of structures working together to provide the movement necessary for daily life. Unfortunately, this great mobility comes at the expense of stability. Four bones and a network of **soft tissues** (ligaments, tendons, and muscles), work together to produce shoulder movement. They interact to keep the joint in place while it moves through extreme ranges of motion. Each of these structures makes an important contribution to shoulder movement and stability. Certain work or sports activities can put great demands upon the shoulder, and injury can occur when the limits of movement are exceeded and/or the individual structures are overloaded. [Click here to read more about shoulder structure.](#)



**What is atraumatic shoulder instability?**

Atraumatic shoulder instability develops in patients who have increased looseness of the supporting ligaments that surround the shoulder's glenohumeral joint. The laxity can be a natural condition (present from birth) or a condition that has developed over time. **Many patients with MDI are active in overhead sports (such as gymnastics, swimming, or throwing) that repetitively stretch the shoulder capsule to extreme ranges of motion.**

The **glenoid** (the socket of the shoulder joint) is a relatively flat surface that is deepened slightly by the **labrum**, a cartilage cup that surrounds part of the head of the humerus. The labrum acts as a bumper to keep the humeral head firmly in place in the glenoid. It is also the attachment point for important ligaments that stabilize the shoulder. **These ligaments often become stretched out with MDI, allowing dislocation or subluxation (an incomplete or partial dislocation) to occur.** The increased motion of the joint can lead to repetitive **microtrauma** (small injuries), producing tears of the labrum or rotator cuff.

MDI patients will often have increased ligament laxity in many joints. Hyperextended knees, elbows, and a self-described history of being "double-jointed" are common. These patients often have multidirectional laxity in both shoulders. **Because many athletes with MDI are quite successful in their sports, there is a debate about whether laxity improves performance or is caused by repetitive stretching during athletic activity.**

### **How is MDI (Multidirectional Instability) treated?**

The treatment for MDI must be individualized for each patient.

### **Non-Operative Treatment**

Most patients with MDI can be treated non-operatively with a **physical therapy** program that emphasizes muscular rehabilitation. Rehabilitation focuses on strengthening the **rotator cuff muscles** and **periscapular muscles** (those around the scapula). Strengthening these muscles provides dynamic stability to the joint, which is especially important when the static stability provided by the ligaments is lacking.

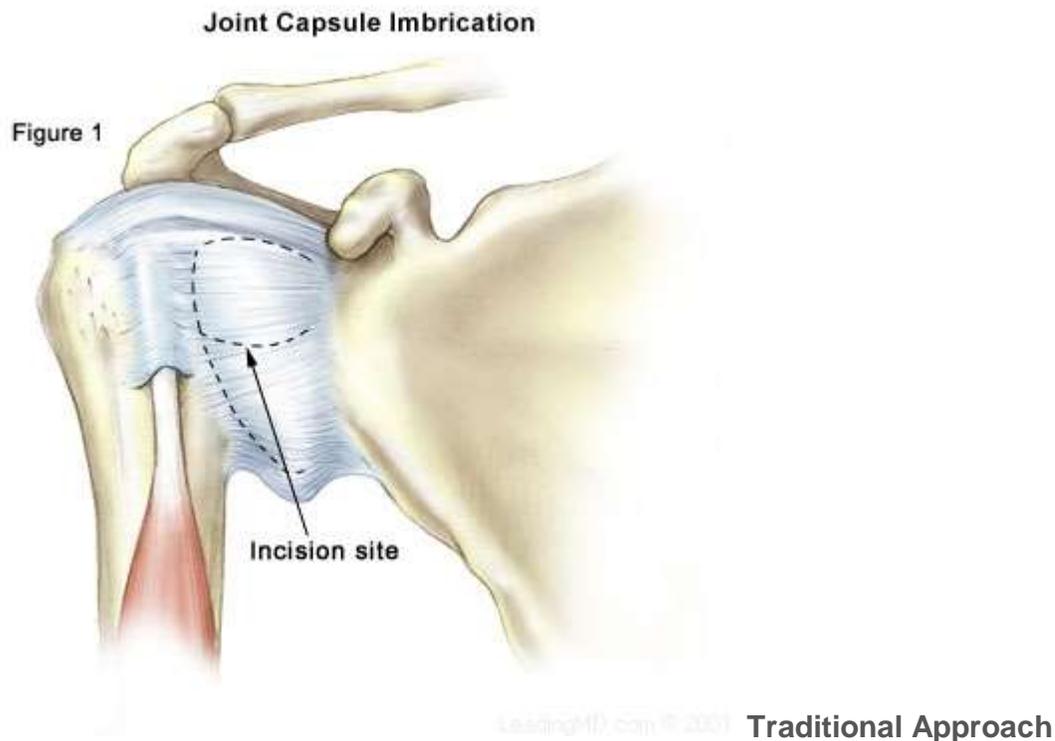
**The vast majority of patients (about 90%) who follow a rehabilitation program diligently for at least six months will achieve pain relief.** Those who continue with a daily or weekly exercise program as outlined by the doctor are most likely to have a successful recovery.

Athletes may also benefit from **sport-specific rehabilitation** that includes technique evaluation and modification. Often this type of program can help eliminate faulty technique that may have led to the development of symptoms.

Patients who do not get relief from symptoms with a physical therapy program are a treatment challenge. **Only about 70-80% of these patients eventually achieve long-term stability, with 60-70% reaching the level of athletic participation they enjoyed prior to the instability.**

## Operative Treatment

The most challenging patient to treat surgically is the athlete whose symptoms continue following a rehabilitation program. Often athletes are successful in their sport because of increased laxity in the joint; so surgical intervention should only be considered when the patient has a thorough understanding of MDI, and is aware that stability with surgical correction is always achieved at the expense of motion. **Patients who can voluntarily dislocate the shoulder are poor surgical candidates; surgery is rarely successful for them.**



The traditional surgery for MDI is designed to make the joint capsule smaller and reduce glenohumeral movement. This open surgical procedure is called an **extensive inferior capsular release and imbrication**.

- The lower portion of the joint capsule is cut and overlapped to tighten the ligaments and make the capsule smaller.

- During this procedure, the subscapularis muscle is detached so the surgeon can access the joint capsule. It is reattached at the end of the procedure.
- The success rate of this procedure is about 75% in a group of carefully selected individuals (those who were determined to be good surgical candidates after a careful history and examination). **Since there can be a substantial loss of motion with this procedure, athletes may not be able to return to competition after surgery.**

### **Arthroscopic Techniques**

Recently, new arthroscopic techniques have been developed to correct multidirectional instability.

- Capsular **plication** (a pleating and stitching technique) uses arthroscopic sutures to reduce the size of the joint capsule.
- **Thermal capsulorrhaphy** is a technique that uses thermal energy to shrink the capsule. This method is being evaluated and looks promising, as it is less invasive and may reduce loss of motion.

These arthroscopic techniques are very exciting, but remain experimental, especially for athletes who require stability and the preservation of motion.

### **What types of complications may occur?**

The most common complication is recurrent instability, which can happen in 20% or more cases, even with carefully chosen patients. Post-operative stiffness and loss of motion are also complications; however, loss of motion is often an acceptable result of achieving stability. An average loss of motion in external rotation is about 10 degrees. A loss of motion greater than that occurs in about 5% of the cases. Other small risks (less than 1%) common to most surgery procedures include infection, nerve damage, or blood vessel injury.