

# Your Practice Online

P R E S E N T S

## SHOULDER INSTABILITY

Multimedia Health Education

### *Disclaimer*

This movie is an educational resource only and should not be used to manage Orthopaedic health. All decisions about the management of Shoulder Instability must be made in conjunction with your Physician or a licensed healthcare provider.

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Your Practice Online

MULTIMEDIA HEALTH EDUCATION MANUAL

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## INTRODUCTION

The shoulder is the most flexible joint in the body making it susceptible to instability and injury.

Shoulder Instability results from one or more dislocations, or partial dislocations, called subluxations, where the upper arm partially or completely dislocates from the shoulder socket to which it is attached. With each occurrence the internal soft tissues of the shoulder are stretched or damaged making the shoulder joint more susceptible to dislocating again. To understand more about Shoulder Instability, it is important to first learn about shoulder anatomy.

## Unit 1: Normal Shoulder Anatomy

### Normal Shoulder Anatomy

There are three bones that come together to form the shoulder joint: the collarbone (clavicle), the shoulder blade (scapula), and the upper arm bone (humerus). The shoulder is a "ball-and-socket" joint. A "ball" at the top of the upper arm bone called the humerus fits neatly into a "socket" called the glenoid, a part of the shoulder blade or scapula.

Cartilage cushions the joint and allows the bones to move on each other with smooth movements.

The cartilage does not show up on X-ray, therefore you can see a "joint space" between the head of the upper arm bone (Humerus) and the Glenoid socket of the shoulder blade (Scapula).

(Refer fig. 1)

### Shoulder Bones

#### Humerus

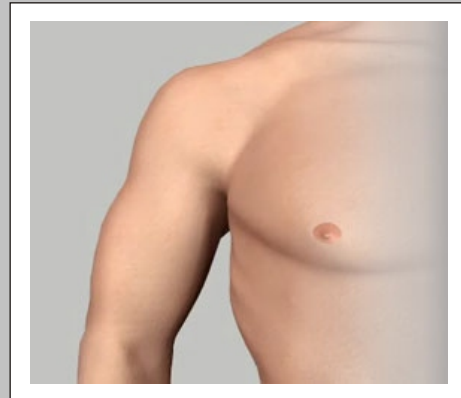
The humerus provides attachment to muscles of the upper arm. The humeral head forms the ball of the ball-and-socket shoulder joint.

(Refer fig. 2)

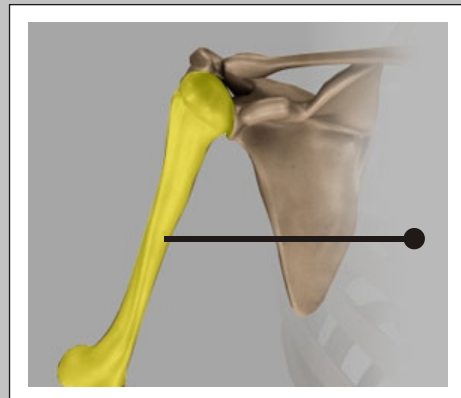
#### Scapula

The scapula (shoulder blade) is a flat, triangular bone providing attachment to the muscles of the back and neck.

(Refer fig. 3)

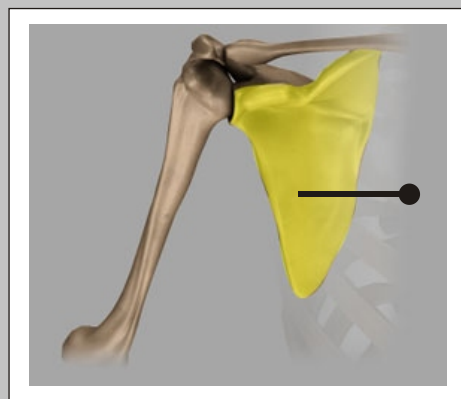


(Fig. 1)



Humerus

(Fig. 2)



Scapula

(Fig. 3)

## Unit 1: Normal Shoulder Anatomy

### Clavicle

The clavicle is an S-shaped bone that connects the shoulder girdle to the trunk. It maintains the shoulder in a functional position with the axial skeleton and allows varied arm positions in sports.

In addition to its structural function, the clavicle protects major underlying nerves and blood vessels as they pass from the neck

*(Refer fig. 4)*

### Coracoid Process

The coracoid process is the extension of the scapula or shoulder blade around the shoulder joint at the front

*(Refer fig. 5)*

### Acromion

The acromion is the extension of the scapula or shoulder blade around the shoulder joint at the rear which forms a roof. This is also called the acromial process

*(Refer fig. 6)*

### Glenoid

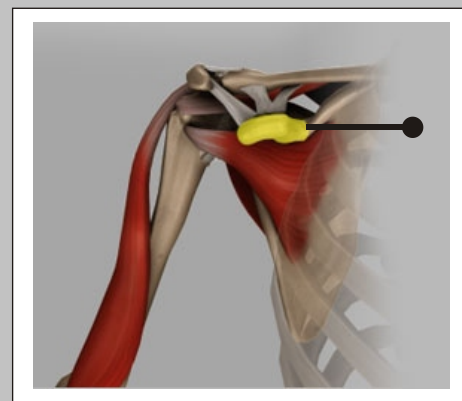
The glenoid is the depression at the end of the scapula that forms the socket of the ball and socket joint.

*(Refer fig. 7)*



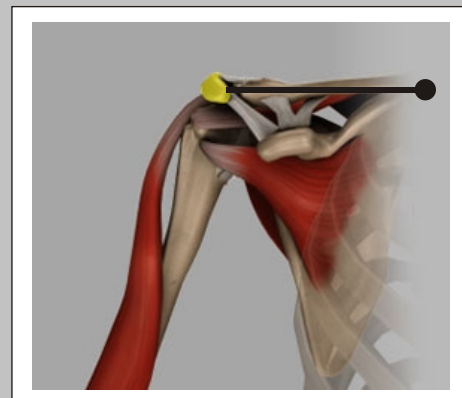
**Clavicle**

**(Fig. 4)**



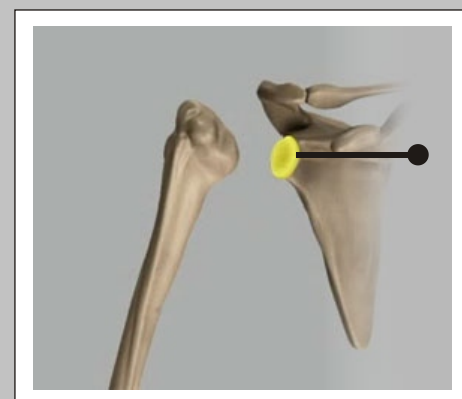
**Coracoid Process**

**(Fig. 5)**



**Acromion**

**(Fig. 6)**



**Glenoid**

**(Fig. 7)**

## Shoulder Soft Tissue Anatomy

The scapula provides bony attachment to a total of 18 different muscles.

### Rotator Cuff

The rotator cuff refers to a group of four tendons that attach four shoulder muscles to the upper arm or humerus and hold it in the shoulder joint. Many shoulder problems are caused by injuries to the rotator cuff

(Refer fig. 8)

### Biceps Tendons

The biceps tendon is a long cord-like structure which attaches the biceps muscle to the shoulder and helps to stabilize the joint.

(Refer fig. 9)

### Coracoclavicular Ligament

Ligaments connect bone to bone, and coracoclavicular ligament connects the corocoid process of the scapula to the clavicle.

(Refer fig. 10)

### Acromioclavicular Ligament

Ligaments connect bone to bone, and acromioclavicular ligament connects the Acromion process to the clavicle.

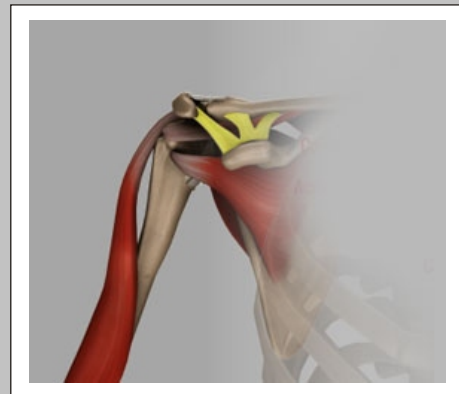
(Refer fig. 11)



(Fig. 8)



(Fig. 9)



(Fig. 10)



(Fig. 11)

## Unit 1: Normal Shoulder Anatomy

### Glenoid Labrum

The Glenoid labrum is a ring of fibrous cartilage surrounding the glenoid for stabilization of the shoulder joint.

*(Refer fig. 12)*

### Capsula

The capsule that surrounds the shoulder joint consists of very strong ligaments that helps to keep the ball and socket normally aligned.

*(Refer fig. 13)*



**(Fig. 12)**



**(Fig. 13)**

### What is Shoulder Instability?

Shoulder Instability is a chronic condition causing frequent dislocations of the shoulder joint. A dislocation occurs when the end of the humerus, the ball portion, partially or completely dislocates from the glenoid, the socket portion of the shoulder. A partial dislocation is referred to as a subluxation whereas a complete separation is referred to as a dislocation.

Shoulder Instability increases the chance of further dislocation with every occurrence due to damage and stretching of tissues, ligaments, and other

### Signs and Symptoms

Patients with shoulder instability often report feeling like their shoulder is going to come out of the socket. Doctors may refer to this feeling as Apprehension. Other common symptoms include:

- Pain with certain movements of the shoulder
- Popping or grinding sound may be heard or felt
- Recurrent Subluxation: When the shoulder slips partially out of place repeatedly.
- Recurrent Dislocation: When the shoulder slips all the way out of position repeatedly.
- Severe pain, swelling and bruising of the shoulder immediately following subluxation or dislocation
- Visible deformity and loss of function of the shoulder occurs after subluxation or
- Sensation changes such as numbness or even partial paralysis can occur below the dislocation as a result of pressure on nerves and blood vessels.

### Risk Factors

Risk Factors that increase a person's chance of developing Shoulder Instability include:

- Injury or Trauma to the shoulder
- Falling on an outstretched hand
- Repetitive overhead sports such as baseball, swimming, volleyball, or weightlifting
- Some people are born with loose shoulder ligaments or an enlarged capsule.

### Conservative Treatment

Most scapular fractures are not significantly displaced due to the strong supporting soft tissue structures surrounding it. Therefore, a majority of scapular fractures are treated conservatively and with early motion to reduce the risk of stiffness and will usually heal without affecting shoulder movement.



Conservative treatment options include:

### Immobilization

A sling is used for comfort and to support the shoulder to allow healing to take place. This is usually worn about 4-6 weeks depending on the type of fracture and how well you heal.

### Prescriptions Medications

Pain medications will be prescribed for your comfort during the healing process

### Physical Therapy

Early progressive range of motion exercises are essential in restoring full shoulder function. Your physician will most likely refer you to an Physical Therapist for instruction on proper exercises and early motion of the shoulder to prevent complications.

The goal of conservative treatment for Shoulder Instability is to restore stability, strength, and full range of motion. Conservative treatments measures may include the following:

### Closed Reduction

Following a dislocation, your Orthopaedist can often manipulate the shoulder joint, usually under anesthesia, realigning it into proper position. Surgery may still be necessary to restore normal function depending on your situation.

### Medications

Over the counter pain meds such as aspirin and NSAID's (non-steroidal anti-inflammatory drugs) such as ibuprofen can help with the pain and swelling. Cortisone injections may also be administered to decrease swelling.

### Rest

Rest the injured shoulder as much as possible and avoid activities that require overhead motion. A sling may be ordered for 1-2 weeks to facilitate healing.

### Ice

Ice packs applied to the injury will help diminish swelling and pain. Ice should be applied over a towel to the affected area for 20 minutes every hour. Never place ice directly over the skin.

### Occupational Therapy

Your physician may refer you to a therapist for instruction in strengthening and stretching exercises.

## Surgical Introduction

When conservative treatment options fail to relieve shoulder instability your Orthopaedic surgeon may recommend Shoulder Stabilization surgery. The goal of Shoulder Stabilization surgery is to improve stability and function to the shoulder joint and prevent recurrent dislocations. Shoulder stabilization surgery has traditionally been performed as open surgery, with large incisions and a long recovery process.

Shoulder Stabilization surgery can now be performed arthroscopically, depending on your particular situation, with much smaller incisions. Occasionally, however, arthroscopic surgery may need to be converted to open surgery to properly repair the damage to internal structures.

Arthroscopy is a surgical procedure in which an arthroscope, a small, soft, flexible tube with a light and video camera at the end, is inserted into a joint to evaluate and treat a variety of conditions. The benefits of arthroscopy compared to the alternative, open shoulder surgery, include:

- Smaller incisions
- Minimal soft tissue trauma
- Less pain
- Faster healing time
- Lower infection rate
- Less scarring
- Earlier mobilization
- Usually performed as outpatient day surgery

## Surgical Treatment

Shoulder Stabilization surgery is performed in a hospital operating room under general anesthesia.

Your surgeon will perform shoulder arthroscopy to assess the shoulder joint and develop the surgical plan. The arthroscope is a small fiber-optic viewing instrument made up of a tiny lens, light source and video camera.

*(Refer fig. 14 to 19)*



**(Fig. 14)**

### Unit 3:

### Treatment Options

The surgical instruments used in arthroscopic surgery are very small (only 3 or 4 mm in diameter) but appear much larger when viewed through an arthroscope.

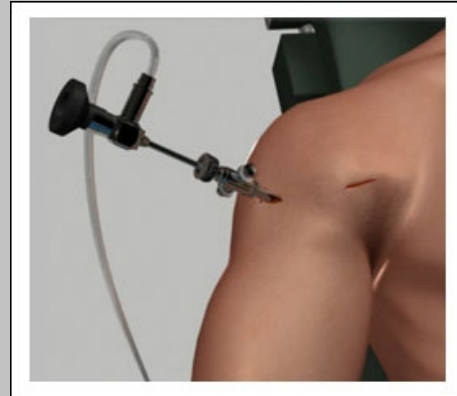
The television camera attached to the arthroscope displays the image of the joint on a television screen, allowing the surgeon to look throughout the shoulder joint at cartilage, ligaments, and bone. The surgeon can determine the amount or type of injury, and then repair or correct the problem as necessary.

The surgeon makes a few small incisions (about 1/4 of an inch), around the joint area. Each incision is called a portal. These incisions result in very small scars, which in many cases are unnoticeable.

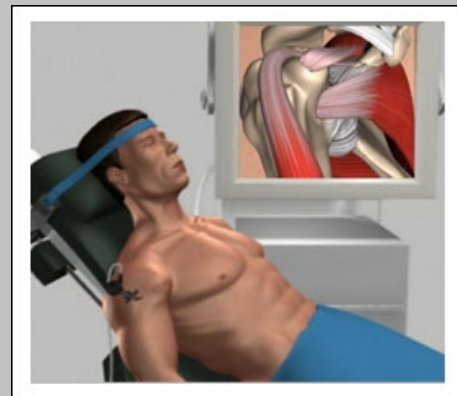
In one portal, the arthroscope is inserted to view the shoulder joint. Along with the arthroscope, a sterile solution is pumped to the joint which expands the shoulder joint, giving the surgeon a clear view and room to work.

With the images from the arthroscope as a guide, the surgeon can look for any pathology or anomaly. The other portals are used for the insertion of surgical instruments. If your surgeon can stabilize the shoulder without reverting to an open, much larger incision, they will perform the necessary repair to the supporting structures.

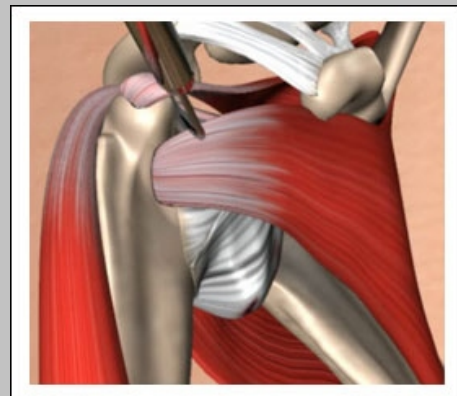
*(Refer fig. 14 to 19)*



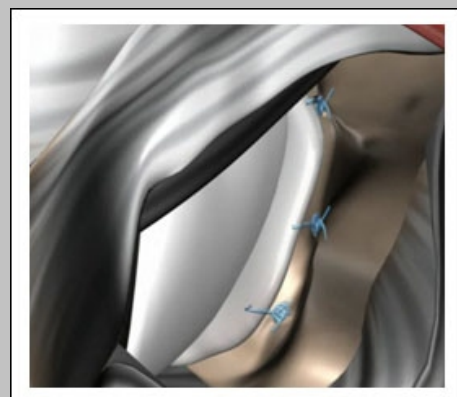
(Fig. 15)



(Fig. 16)



(Fig. 17)



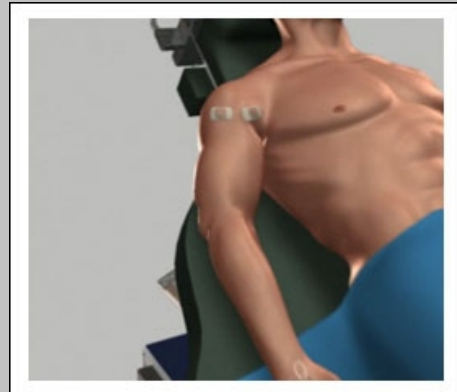
(Fig. 18)

## Unit 3:

## Treatment Options

This may involve repairing a tear in the labrum as well as tightening the capsule and ligaments.

After stabilizing the shoulder, the portals (incisions) are closed by suturing or by tape.



(Fig. 19)

Arthroscopy is much less traumatic to the muscles, ligaments, and tissues than the traditional method of surgically opening the shoulder with long incisions (open techniques).

*(Refer fig. 14 to 19)*

### Post Operative Care

- You will wake up in the recovery room and then be transferred back to your hospital room.
- Pain medication will be provided to keep you comfortable.
- A bandage will be around the operated shoulder and your arm will be in a sling or brace. The sling will be worn for about 4-6 weeks to facilitate healing.
- Your surgeon will see you prior to discharge and explain the findings of the operation and what was done during Surgery.
- You can remove the bandage usually in 48 hrs and place dressings provided by your surgeon over the area.
- It is NORMAL for the shoulder to swell after the surgery. Placing Ice-Packs on the shoulder will help to reduce swelling. Apply ice packs to the area for 20 min 3-4 times a day until swelling has reduced.
- You should keep a pillow under your elbow while lying in bed.
- You will not be allowed to lift anything over your head or anything greater than 1-2 pounds for the first 6 weeks.
- You will make an appointment with your surgeon 7-10 days after surgery to monitor your progress and have your sutures removed.
- It is recommended that you not drive during the first 6 weeks while wearing a sling due to safety reasons and the risk of injury to the surgical site.
- You will be given specific instructions regarding activity and a rehabilitation program of exercise and strengthening.
- Eating a healthy diet and not smoking will promote healing.

## Risks and Complications

As with any major surgery there are potential risks involved. The decision to proceed with the surgery is made because the advantages of surgery outweigh the potential disadvantages. It is important that you are informed of these risks before the surgery takes place.

Complications can be medical (general) or specific to Shoulder Resurfacing surgery. Medical complications include those of the anesthetic and your general well being. Almost any medical condition can occur so this list is not complete. Complications include:

- Allergic reactions to medications
- Blood loss requiring transfusion with its low risk of disease transmission
- Heart attacks, strokes, kidney failure, pneumonia, bladder infections.
- Complications from nerve blocks such as infection or nerve damage.

Serious medical problems can lead to ongoing health concerns, prolonged hospitalization or rarely death.

Specific complications for Shoulder Stabilization surgery are rare but may

### Infection

Infections can occur superficially at the incision or in the joint space of the shoulder, a more serious infection. Infection rates vary; if it occurs it can be treated with antibiotics but may require further surgery.

### Shoulder Stiffness

Shoulder stiffness with loss of range of motion is a common complication that can be greatly minimized with strict adherence to your occupational therapy program prescribed by your surgeon.

### Dislocations

Dislocations and/or subluxations with activity can occur before healing has taken place. It is very important that you follow your surgeon's guidelines for activity restrictions.

### Damage to nerves of Blood vessels

Also rare but can lead to weakness or loss of sensation in part of the arm. Damage to blood vessels may require further surgery if bleeding is ongoing.

### Damage to the joint

Joint damage to the cartilage or other structures can occur during surgery and may require another operation to repair.

## Blood Clots (Deep Venous Thrombosis)

These can form in the arm muscles and can travel to the lung (Pulmonary embolism). These can occasionally be serious and even life threatening. If you get arm pain, redness or swelling, or have shortness of breath at any stage, you should notify your surgeon.

## Hemarthrosis

A condition caused by excess bleeding into the joint after the surgery is completed. This may require additional surgery to irrigate the joint and

Discuss your concerns thoroughly with your orthopaedic surgeon prior to surgery. Risk factors that can negatively affect adequate healing after shoulder stabilization surgery include:



(Fig. 20)

## Summary

A good knowledge of this procedure will make the stress of undertaking the procedure easier for you to bear. The decision to proceed with the surgery is made because the advantages of surgery outweigh the potential disadvantages. It is important that you are informed of these risks before the surgery.

## Disclaimer

Although every effort is made to educate you on Shoulder Instability and take control, there will be specific information that will not be discussed. Talk to your doctor or health care provider about any concerns you have about Shoulder Instability.

You must not proceed until you are confident that you understand this procedure, particularly, the complications.



YOUR SURGERY DATE

READ YOUR BOOK AND MATERIAL

VIEW YOUR VIDEO/CD/DVD/ WEBSITE

PRE - HABILITATION

ARRANGE FOR BLOOD

MEDICAL CHECK UP

ADVANCE MEDICAL DIRECTIVE

PRE - ADMISSION TESTING

FAMILY SUPPORT REVIEW

Physician's Name : \_\_\_\_\_

Patient's Name : \_\_\_\_\_

Physician's Signature: \_\_\_\_\_

Patient's Signature: \_\_\_\_\_

Date : \_\_\_\_\_

Date : \_\_\_\_\_