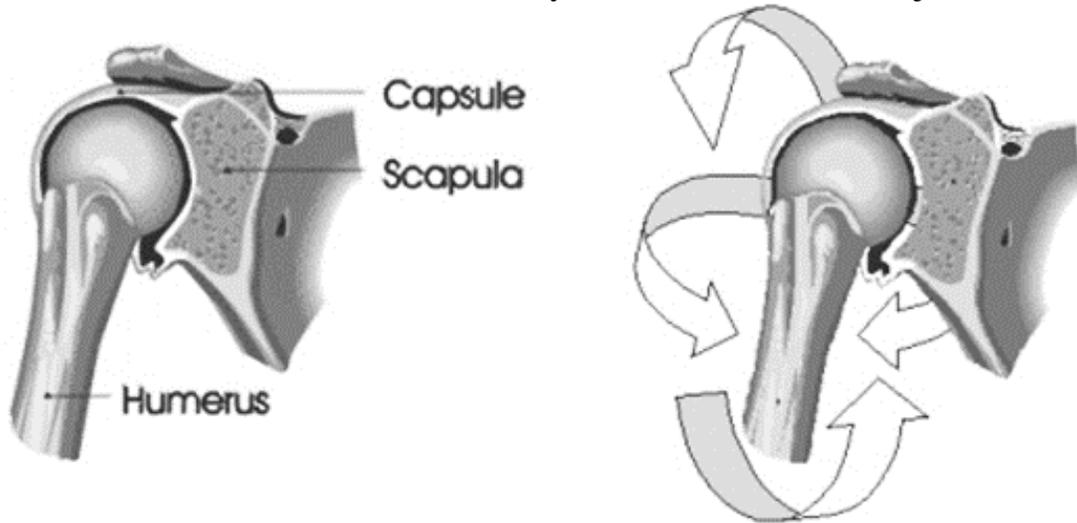


SHOULDER:

Instability • Dislocation • Labral Tears

The shoulder is the most mobile joint in the body, but to have this amount of motion, it is also less stable and more likely to dislocate than other joints.

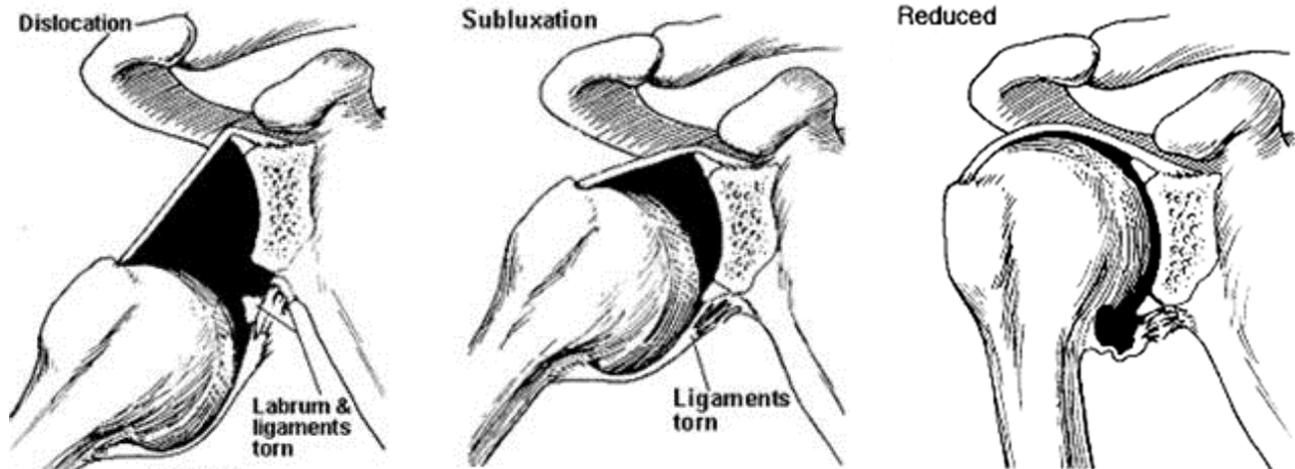


The shoulder works like a ball and socket joint, but the bones are much more like a golf ball on a tee. The socket is called the **glenoid**, and the ball is the upper termination of the **humerus** (arm) bone. The **labrum** is a ring of specialized soft cartilage (similar to meniscus tissue in the knee) around the rim of the glenoid. It helps to make the glenoid socket slightly deeper and makes the shoulder much more stable. The rotator cuff muscles are also very important for shoulder stability—they actively pull and compress the humeral head against the socket. Rehab of the rotator cuff plays a large part in the recovering from injury or surgery.

In a younger person's shoulder, the labrum is often torn away from the bone when the shoulder **dislocates** (*the ball comes all the way out of the socket*) or the shoulder **subluxes** (*the ball comes partially out of the socket*). The labrum can also be damaged or torn with repetitive overhead use of the arm such as in throwing, tennis, and rock climbing. Damage to the labrum can be painful by itself, but most of the pain and disability comes from abnormal motion when the shoulder is used. The shoulder can also be unstable due to ligament or capsular **laxity** (*looseness*) and not specifically from a torn labrum.

Labral injuries and shoulder instability can occur in a variety of locations and patterns. The most common of these is an **anterior labral tear** (in the front of the

shoulder), usually the result of a subluxation or dislocation in the front of the shoulder:



The next most common pattern of injury is a **superior labral tear** (at the top of the glenoid) which usually happens from repetitive overhead activities like baseball, volleyball, tennis, surfing/swimming, and even rock climbing. It can also occur from an acute traction injury, such as grabbing a rock hold or the rung of a ladder while falling, causing the arm to be pulled upward. These tears are referred to as **SLAP** (superior labrum, anterior to posterior) tears.

The shoulder can also dislocate or be unstable in a **posterior** direction (toward the back of the shoulder). This is either the result of repetitive “pushing” stress as with football linemen or from an injury that pushes the head to the back of the socket.

The last pattern of instability occurs as result of **general laxity** (looseness) in the ligaments and the shoulder capsule. This is usually accompanied by laxity in other joints (patients are typically female and often very flexible). For these patients, their shoulder is inherently unstable. As a result, it can become irritated or injured by a change in activity or strength, without a definitive labral tear.

HISTORY AND PHYSICAL EXAM

We will ask you about how you hurt your shoulder and the exact mechanism of injury. If your pain is the result of repetitive stress, it's important for us to understand exactly how the shoulder was used as the injury progressed. If this was an acute dislocation, it's important to know if this was your first dislocation or one of many, and if the shoulder is becoming easier to dislocate over time. Be sure to mention any numbness, tingling or other neurologic symptoms you have noticed as well.

X-Rays

These are part of the standard evaluation of any new shoulder problem. Even if you don't think anything is broken, sometimes small fractures can occur around the shoulder socket (called Bankart fractures), or large indentations can occur in the humeral head (called Hill-Sachs lesions), which can change the way we think about and treat your problem.

MRI

A Magnetic Resonance Image (**MRI**) is different from an x-ray because it allows us to see the soft tissues (tendons, ligaments, and cartilage) around the shoulder. It also takes longer than an x-ray and can be troublesome for people who are claustrophobic. If surgery is planned, an MRI is often needed to plan the size and scope of the operation. For shoulder instability and labral problems, an MRI with intra-articular dye (aka **MRA**, or **MR arthrogram**) may be warranted. This is the best way to see the glenoid labrum, which allows us to assess the amount of injury and the possibility of re-injury or another dislocation. **Patients who have a personal or family history of kidney disease should be sure to have a creatinine level (simple blood test) checked before having the dye injection.**

TREATMENT

The goal of all treatment for instability and labral injuries is to decrease pain and restore shoulder function. The specific treatment that your doctor recommends will depend on your age, sport and activities, and the type of injury.

Relative Rest • Physical Therapy • (6-10 weeks)

Relative rest with supervised physical therapy is often the first-line treatment for these types of shoulder problems. It is almost always the treatment for first-time

dislocators of any age. Exceptions include special fractures around the shoulder, or if special athletic season requirements apply. Relative rest means:

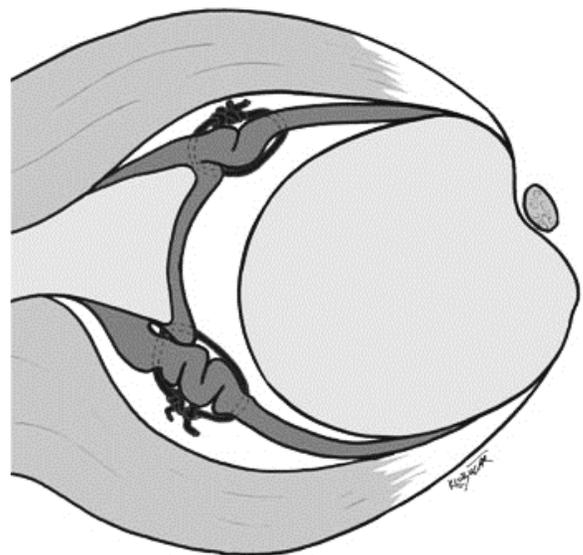
- Avoid having the arm abducted and externally rotated (arm at 90° with the forearm at 90°, pointing towards the ceiling).
- Avoid repetitive lifting of your arm above shoulder level
- Avoid throwing or tennis serve (for athletes)
- No pushing or pulling heavy loads
- Keeping your hands at or below eye level when working out
- Avoid reading or watching TV while propped up on your elbow
- Daily stretching and gentle range of motion to prevent stiffness
- Icing your shoulder for 15-20 minutes once or twice daily
- Acetaminophen (Tylenol) or anti-inflammatory medications like ibuprofen or naprosyn as necessary to help with pain control

The goal of **physical therapy** is to strengthen the other muscles around the shoulder to help stabilize the shoulder. This decreases the stress on the torn tissues and helps re-train the shoulder to function normally. In particular, the best treatment for patients with shoulder pain from generalized laxity is physical therapy and a life-long shoulder exercise program.

Surgery

If, after an appropriate amount of rest and therapy, the shoulder continues to be unstable or painful, **arthroscopic surgery** becomes an option to repair (*sew back together*) or debride (*remove torn or frayed tissue*) the labrum and capsule. Occasionally, surgery is recommended after a first or second dislocation due to the size of the tear, the age or activity level of the patient, athletic season, or the presence of an associated injury (*loose body, bone fracture, rotator cuff tear, or biceps tendon tear*).

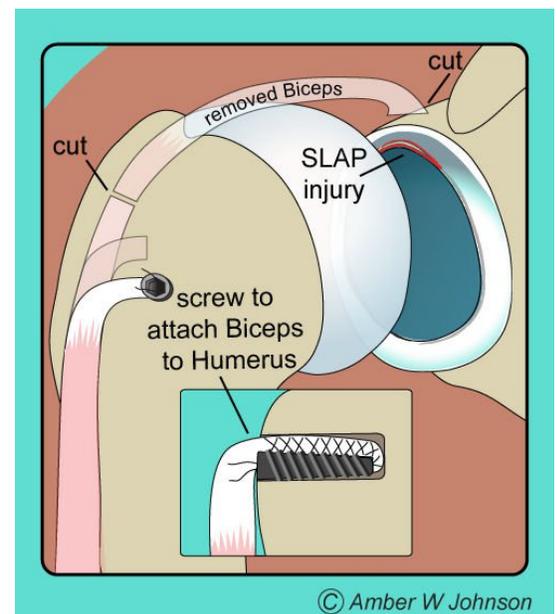
This is outpatient surgery with an arthroscope (a camera used to look into the joint). Three to six small incisions are made around the shoulder to look inside the shoulder joint and the sub-acromial bursa (the space above the rotator cuff).



The goal of surgery depends on your problem. In general, the goals of surgery fall into a few broad categories:

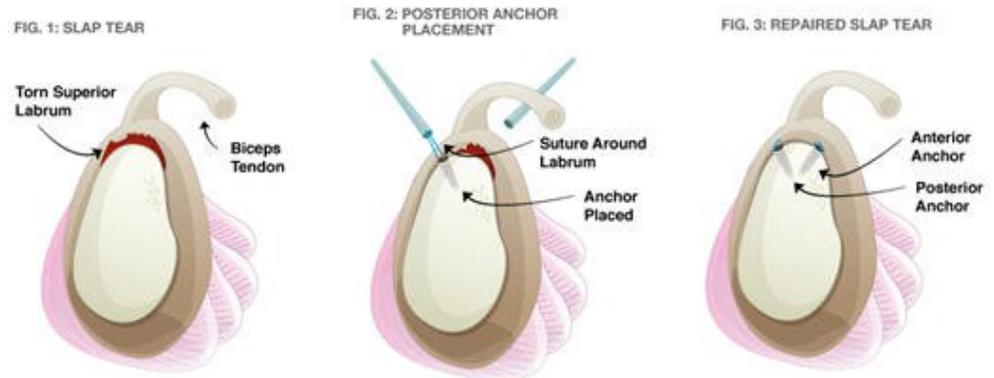
- For the **unstable shoulder**: the labral and capsular tissue is generally repaired back to the glenoid, while tightening the capsule/ligaments at the same time (like taking in the waste of a pair of pants). The location and extent of the repair depends on your pattern of instability (anterior or posterior, or generalized laxity) as well as the exact pathology that is discovered at the time of surgery. *In general, if there have been many episodes of dislocation or subluxation, the results of surgery are less predictable.*
 - Special circumstances:
 - **Glenoid bone loss**: With many repetitive dislocations, the front of the glenoid rim can be worn away (think broken golf tee). A CT scan may be ordered before surgery to check for this. If the glenoid bone loss is significant ($> \sim 20\%$), an open bone graft procedure called a Latarjet may be required.
 - **Large Hill-Sachs defect**: if there is a very large dent in the back of the humerus that still catches on the front of the glenoid after we repair and tighten your ligaments, a procedure called a **Replissage** may be performed. The back portion of your rotator cuff will be repaired into the defect, to prevent it catching on the glenoid. This can result in some minor loss of external rotation, but will help make sure the shoulder is stable.

- For the **painful shoulder**:
 - If the primary problem is pain from a SLAP tear, the typical treatment depends on your age and activity demands on your shoulder:
 - For most patients over age 25, the most reliable method to relieve pain is to reroute the biceps out of the shoulder, attaching it instead to your upper humerus. This is called a **biceps tenodesis**. Your strength after rehab should be the same as before surgery, but the constant tugging of the biceps on



the labral tear will be relieved.

- For elite level throwers or overhead athletes, a SLAP repair is performed. The upper labrum and biceps are repaired back to their original location. The rehab after this procedure is longer, and healing is more unpredictable than with a tenodesis. If it heals, however, it will restore more normal throwing mechanics to your shoulder. It should be understood that the results of returning pitchers and elite overhead athletes to their former level of competition is unpredictable, however.



Risks

Although most patients have significant relief after shoulder surgery, it is not uncommon to have occasional stiffness or soreness in the shoulder after the operation. The **risks** associated with shoulder surgery are generally low, but there are some **specific complications** that can occur:

- *Continued pain or significant stiffness due to scarring in the shoulder, occasionally requiring more surgery to release scar and manipulate the shoulder*
- *Re-dislocation*
- *Re-tear or progression of labral tearing*
- *Non-healing of the labrum (if a repair was attempted)*
- *Development of sub-acromial bursitis, rotator cuff tear, or acromioclavicular (AC joint) arthritis*

A more **general complication** of surgery can also occur. These include:

- *Deep venous thrombosis (aka “blood clot” or DVT)*

- *Infection (all patients receive antibiotics at the time of surgery to decrease this risk)*
- *Nerve injury (associated with numbness, weakness, or paralysis)*
- *Vascular injury or compartment syndrome*
- *Complications associated with the anesthesia*

QUESTIONS?

If you have questions or concerns about any of these issues related to your shoulder, please discuss these with us at any time.

Internet Resources • Helpful Websites

Industry sponsored surgical animations

American Academy of Orthopaedic Surgeons

Mayo Clinic

eOrthopod

<http://www.orthoillustrated.com>

<http://orthoinfo.org>

<http://www.mayoclinic.com>

<http://eorthopod.com>