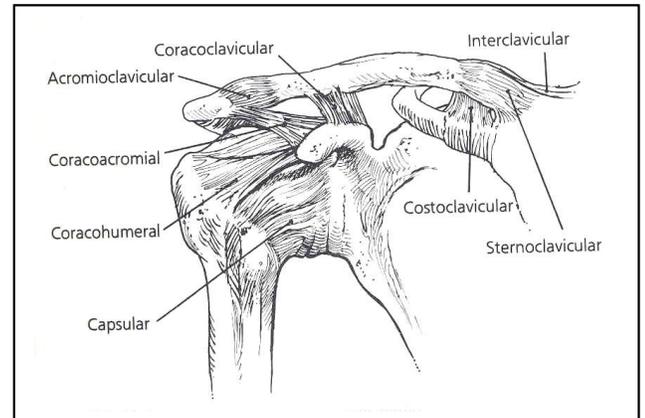


## SHOULDER INSTABILITY - DISLOCATION AND SUBLUXATION

### THE INJURY

The shoulder joint is a ball and socket joint that connects the bone of the upper arm (humerus) with the shoulder blade (scapula). The shallow socket in the scapula is the glenoid cavity. The capsule is a broad ligament that surrounds and stabilizes the joint. The glenoid labrum is a rim of cartilage attached to the glenoid rim. If the arm is pulled out of its socket, the capsule and labrum tear, usually from the rim of the glenoid cavity. A dislocation occurs when the humerus comes completely out of the socket and stays out. A subluxation occurs when the humerus comes partly out of the socket and then slips back in.



When the capsule tears from the glenoid rim, the shoulder can become unstable and dislocate or subluxate repeatedly. The most common direction for the humeral head to dislocate is toward the front of the body (anteriorly); this typically occurs if the arm goes too far behind the body when the arm is in an overhead position (such as when throwing a ball). The humeral head can also dislocate toward the back of the body (posteriorly) when force is directed toward the back of the shoulder; this can occur when falling forward on an outstretched arm or blocking with the arm straight ahead in football.

### DIAGNOSIS OF SHOULDER INSTABILITY

The direction of a shoulder dislocation or subluxation can usually be made by physical examination. It is possible for the shoulder to be unstable in more than one direction. “Multidirectional instability” is more common in loose-jointed (double jointed) individuals.

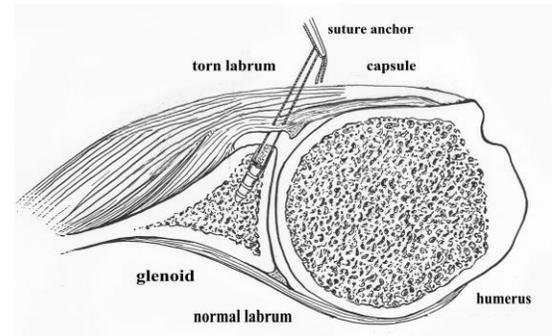
If the diagnosis of instability or its direction is in doubt, additional tests that can be helpful are:

- magnetic resonance imaging (MRI) or computed tomography (CT)
- MRI or CT scan can be performed after dye is injected into the shoulder joint (arthro MRI or arthro CT)
- examination under anesthesia followed by arthroscopic surgery

## TREATMENT OF SHOULDER INSTABILITY

Some patients who dislocate their shoulder do well after the injury and do not have recurrent instability. They tend to be older in age and not active in sports. Young people, especially athletes, are prone to have recurrent dislocations and subluxations and usually need surgery to correct the shoulder problem.

The unstable shoulder joint can be repaired by reattaching the torn labrum and capsule to the glenoid rim. This is called : Bankart repair. The repair is generally done through a minimally invasive approach called arthroscopic surgery. In some instances, an open procedure is performed in which the muscles are separated to expose the shoulder capsule. If the capsule is found to have torn away from the bone, three holes are made in the glenoid rim. Stitches are passed through each hole and through the capsule and tied, securing the ligaments and capsule to the glenoid rim. The capsule heals back to the bony rim and prevents the shoulder from re-dislocating.



It takes several months for the capsule to heal back to the bone. During this time, extremes of shoulder motion should be avoided so that the stitches are not torn.

## RESULTS AND RISKS OF SURGERY

The success rate of the open Bankart repair is approximately 95%. The success rate of arthroscopic Bankart repair can be similar, assuming there is little or no bone loss. If there is a fracture of the glenoid rim (Bankart fracture) and a compression fracture of the humeral head (Hill-Sachs lesion), there is an increased risk of recurrent instability following repair.

Two nerves are at risk during surgery since they are near the operative field, but they are rarely injured. As with any surgical procedure, there are potential risks: The incidence of infection is less than 0.5%. The shoulder can lose some motion after surgery, especially if the shoulder has to be significantly tightened because of excess laxity. Recurrent instability can occur.

**SHOULDER INSTABILITY  
BANKART REPAIR and ANTERIOR STABILIZING PROCEDURES**

**PREOPERATIVE INSTRUCTIONS**

Within one month before surgery - as indicated by Dr. Gill

- Preoperative office visit for history and physical examination and instructions
- Complete blood count (CBC) if indicated
- Electrocardiogram (EKG) if indicated

Within several days before surgery

- Wash the shoulder and axilla well
- Be careful of the skin to avoid sunburn, poison ivy, etc.

The day before surgery

- Check with Dr. Gill's office for your time to report to the Surgical Center.
- **HAVE NOTHING TO EAT OR DRINK AFTER MIDNIGHT.** If surgery will be done in the afternoon, you can have **clear liquids only** up to **six hours** before surgery but no milk or food.

The day of surgery

- Please bring your sling, ice machine and any imaging studies to the surgical center.
- Plan to arrive 2 hours prior to your planned surgery time.

## Rehabilitation after Bankart Shoulder Repair and Anterior Stabilizing Procedures

### Phase 0: 0 to 2 weeks after surgery

#### POSTOPERATIVE INSTRUCTIONS

You will wake up in the operating room. A sling and an ice pack will be in place. You will go to the recovery room and generally will be discharged after 1-2 hours. You can get out of bed when you wish. Apply ice to the shoulder to reduce pain and swelling. You may remove the sling whenever you wish and gently move the elbow, wrist and fingers. Follow the Dr. Gill's instructions regarding moving your shoulder after surgery.

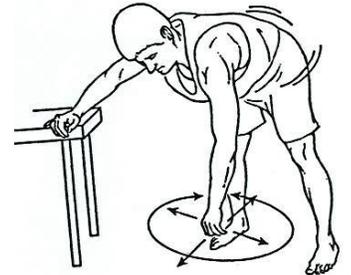
#### GOALS:

1. Control pain and swelling
2. Protect the repair
3. Begin early shoulder motion

#### ACTIVITIES WHEN YOU GO HOME:

1. Apply ice to the shoulder as tolerated to reduce pain and swelling. You can change the dressing to a smaller one to allow the cold therapy to reach the shoulder.

2. Remove the sling on the first day after surgery. Move your elbow, fingers and hand several times per day.
3. Begin the pendulum exercise several times per day:



#### Pendulum exercise

Bend over at the waist and let the arm hang down. Using your body to initiate movement, swing the arm gently forward and backward and in a circular motion. Repeat for 2 to 3 minutes at a time.

4. Remove the outer dressing on the second day after surgery and shower. Leave the little pieces of tape (steri-strips) in place. You can get the wound wet after 2 days in a shower, but do not soak in a tub. To wash under the operated arm, bend over at the waist and let the arm passively swing away from the body. It is safe to wash under the arm in this position.
5. Keep your elbow slightly in front of your body; **do not reach behind your body**. When putting on clothing, lean forward and pull the shirt up and over the operated arm first. Then put the other arm into the opposite sleeve. To remove the shirt, take the unoperated arm out of the sleeve first, and then slip the shirt off of the operated arm.
6. Call Dr. Gill's office for any concerns, including, but not limited to, severe pain, fevers, chills or redness.

**OFFICE VISIT:** Please arrange to come back to Dr. Gill's office 7-10 days after surgery for examination and further instructions.

### Rehabilitation after Bankart Shoulder Repair and Anterior Stabilizing Procedures

## **Phase One: 2 to 5 weeks after surgery**

### **Goals:**

1. Protect the repair
2. Ensure wound healing
3. Prevent shoulder stiffness

### **Activities:**

#### 1. Sling

Use your sling as instructed by Dr. Gill. You may remove it whenever you wish if you are careful and keep the shoulder safe. Put the sling on when you are outside or in a crowd. Keep the sling on when sleeping at night for the first three or four weeks.

#### 2. Use of the operated arm

You may use your hand on the operated arm as long as you **do not** rotate the arm externally or away from your body. You should bend your arm at the elbow and use your fingers and hand, such as to reach up and touch your face. Keep your elbow in front of you.

#### 3. Bathing and showering

You may shower or bath and wash the incision area. To wash under the operated arm, bend over at the waist and let the arm passively swing away from the body. It is safe to wash under the arm in this position. This is the same position as the pendulum exercise.

### **ICE**

Days per Week: 7                      as necessary                      15- 20 minutes                      Times per Day: 4-5

### **STRETCHING / PASSIVE MOTION**

Days per Week: 7                      Times per day : 4-5

### **Program:**

#### **Range of Motion**

Pendulum exercises

Supine External Rotation

Weeks 1 and 2: limit to 0 degrees  
(straight up)

Weeks 3 to 6: limit to 30 degrees.

Supine forward arm elevation.

Starting at **3<sup>rd</sup> week** after surgery:  
Behind the back internal rotation.

#### **Strengthening exercises**

Isometric exercises:

Internal and external rotation at neutral.

Prone row

Prone extension (do not extend past hip)

Side-lying external rotation

Rhythmic stabilization and  
proprioceptive training drills with  
physical therapist.

Ball squeeze exercise.

## **Rehabilitation after Bankart Shoulder Repair and Anterior Stabilizing Procedures**

### **Phase Two: 5 to 8 weeks after surgery**

#### **Goals:**

1. Protect the shoulder and avoid overstressing the repair
2. Improve range of motion of the shoulder
3. Begin strengthening exercises

#### **Activities:**

1. Sling

The sling is no longer necessary.

2. Use of the operated arm

You may now use your arm. Avoid having the arm forcefully pulled behind you. Continue to avoid heavy weight lifting or manual labor. Follow any further instructions given to you by your doctor.

3. Precautions

Do not lift objects overhead with the weight of the object going behind the head. In other words, keep objects in front of you where you can see them.

4. Use ice or cold as necessary 15-20 minutes.

### **STRETCHING / ACTIVE MOTION**

Days per week: 7    Times per day: 1-3

#### Pendulum exercises

Supine External Rotation

Standing External Rotation

Week 3: limit to 30 degrees

Week 4: limit to 45 degrees

Supine passive arm elevation

Seated-standing forward arm elevation

Behind the back internal rotation



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## **STRENGTHENING EXERCISES**

Days per week: 7 Times per day: 1

Theraband internal and external rotation

Prone row

Prone horizontal abduction 'T's

Prone extension

Standing scaption

Side-lying external rotation

Rhythmic stabilization and proprioceptive training drills with physical therapist.

**Rehabilitation after Bankart Shoulder Repair and Anterior Stabilizing Procedures  
Phase Three: 8 to 12 weeks after surgery**

**Goals:**

1. Protect the shoulder repair
2. Regain full range of motion
3. Continue gentle strengthening

**Activities:**

2. Use of the operated arm

You may now use your arm in a more normal fashion. You may move the arm into all positions including external rotation and behind the back if it is comfortable. Avoid having the arm forcefully pulled behind you. Continue to avoid heavy weight lifting or manual labor. Follow any further instructions given to you by your doctor.

3. Precautions

Do not lift heavy weights overhead with the weight going behind the head. In other words, keep the weights in front of you where you can see them.

**Exercise Program:**

**STRETCHING / MOTION**

Days per week: 7 Times per day: 1-2

Pendulum exercises

Standing external rotation /doorway

Wall slide stretch

Hands-behind-head stretch

*(Starting the 9<sup>th</sup> week after surgery)*

Behind the back internal rotation

Supine cross-chest stretch

Sidelying internal rotation

**STRENGTHENING / THERABAND**

**Days per week: 7 Times per day: 1**

External rotation

Internal rotation

Standing forward punch

Shoulder shrug

Standing scaption “full-can” exercise

Rhythmic stabilization and proprioceptive training drills with physical therapist

Dynamic hug, “W”’s, Seated row, Biceps curl



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STRENGTHENING / DYNAMIC

**Days per week: 7 Times per day: 1**

Side-lying external rotation

Prone horizontal abduction 'T's

Prone scaption "Y"s

Prone row

Prone extension

## **Rehabilitation after Bankart Shoulder Repair and Anterior Stabilizing Procedures**

### **Phase Four: 12 to 24 weeks after surgery**

#### **Goals:**

1. Protect the ligament repair
2. Regain full range of motion
3. Continue strengthening
4. Gradual return to full activity

#### **Activities:**

Use the arm for normal daily activities. There is no restriction on your range of motion unless exceptions are outlined in your discussions with your doctor. Weight training can gradually resume with caution being paid to exercises such as bench press, incline press, dips, pull-downs behind the neck or other exercises where the hands are repeatedly placed behind you. If you are returning to contact sports, you should wait until six months after surgery.

#### **Exercise Program**

##### **STRETCHING / MOTION**

Times per day: 1 Days: 5-7

Standing External Rotation / Doorway  
Wall slide Stretch  
Hands-behind-head stretch  
Behind the back internal rotation  
Supine Cross-Chest Stretch  
Sidelying internal rotation  
External rotation at 90° Abduction stretch

##### **STRENGTHENING / THERABAND**

Times per day: 1 Days per week: 3

Continue exercises from phase 3  
Optional exercises:  
External rotation at 90°  
Internal rotation at 90°  
Standing 'T's  
Diagonal up / down

##### **STRENGTHENING / DYNAMIC**

Times per day: 1 Days per week: 3

Continue exercises from phase 3  
Prone external rotation at 90° abduction "U's  
Biceps curls  
Resisted forearm supination-pronation  
Resisted wrist flexion-extension  
PNF manual resistance with physical therapist  
Push-up progression

##### **PLYOMETRIC PROGRAM**

May begin with clearance from your physical therapist.

##### **WEIGHT TRAINING**

See weight training precautions section

##### **INTERVAL SPORTS PROGRAMS**

May begin with clearance from Dr. Gill.

## **Guidelines for Returning to Weight Training After Arthroscopic Labrum Repair**

You should not return to training using heavy weights or on weight machines until Dr. Gill determines that it is safe. In general, it is usually safe to return to heavier weight training at 3-4 months following labrum repair.

Before embarking on a weight-training program, you should have full range of shoulder motion and normal strength in the rotator cuff and scapular muscles. Dr. Gill or a physical therapist will test your motion and strength before you start weight training.

When starting your weight-training program, you can start with 3 sets of 15-20 repetitions. Training with high repetition sets ensures that the weights that you are using are not too heavy.

NEVER perform any weight training exercise to the point of muscle failure. “Muscle failure” occurs when, in performing a weight training exercise, the muscle is no longer able to provide the energy necessary to contract and move the joint(s) involved in the particular exercise. Joint, muscle and tendon injuries are more likely to occur when muscle failure occurs.

The following weight training exercises should be avoided after Bankart repair for shoulder instability:

1. Pull downs behind-the-neck (wide-grip)
2. Behind-the-neck shoulder press
3. Wide-grip bench press
4. Standing lateral deltoid raises
5. Triceps press overhead

The following exercises require special cautions:

1. Pull downs should only be done in front of the head, to the chest, with a medium(not wide) grip.
2. Shoulder press overhead should be done carefully, avoiding heavy weights. If doing shoulder presses, always start with the hand in front of the shoulder and end overhead where you can still see your hand. For persons using barbells, this is the “military press”.
3. If bench pressing, your grip should be no wider than the width of your shoulders. Avoid any exercises using grips wider or narrower than shoulder width.
4. Lateral deltoid raises should be avoided because of the impinging and wearing effect on the rotator cuff. Forward raises in the “thumb-up” position are usually safer and can be done with reasonable weights. Lateral raises from the prone or bent over position can be done as a substitute for standing lateral deltoid raises.

5. When doing incline bench press with barbells, there is a danger of shoulder dislocation if the lifter loses control of the bar when returning the barbell to the rack of the incline bench. Always have a spotter for removing and replacing the barbell in this exercise.
6. If you are doing any type of “chest-fly”, keep in mind the following precautions. Do not do any chest-fly exercise with straight elbows. Always allow the elbows to bend and never lower your hands (holding dumbbells) below the level of your chest.
7. If you are using a “Pec-Deck” machine, never let the weight stretch the arms so that your elbows pass behind your chin. You can set the arms on this machine a few clicks forward to adjust the maximum motion allowed.
8. If you are performing “dips” using a set of parallel bars, never lower yourself below the point where the elbows reach a 90-degree angle.
9. For triceps exercises, triceps pushdowns on a pulley system are safe as well as bent-over triceps extensions.
10. When doing the upright-rowing exercise, keep your grip at least 12 inches apart. When pulling the bar upward toward the chin, do not raise the bar higher than the point at which the elbow reaches shoulder level.

#### Exercises Usually Problem-Free

1. Biceps Curls
2. Cable and bent-over rowing
3. Shoulder shrugs

If your goal is returning to high-level weight training or weight lifting, it will take 3 to 6 months of cautious, gradual progression to return to top form. In general, avoid increasing the amount of weight lifted by more than 10-15% (at a time) of your present working weight every 10-14 days.

Remember: Weight training is beneficial to improve muscular strength and protect the joints from injury. If done improperly by using too much weight and/or improper technique, weight training can cause serious injury.

## Rehabilitation after Bankart Repair and Anterior Stabilizing Procedures of the Shoulder

| Post-op phase   | Range of Motion   | Therapeutic Exercise   |   | Precautions   |
|---|---|--|---|---|
| <p>Phase 0<br/>0-2 weeks after surgery</p> <p><u>Goals:</u><br/>*Allow healing of the repair.</p> <p>*Initiate early protected and restricted range of motion.<br/>*Minimize muscular atrophy.<br/>*Decrease pain/inflammation.</p> | <p><b>Weeks 0-2</b></p> <p>*Flexion 90-100<br/>*ERN limit 5-10°<br/>*ER/IR with arm in scapular plane at 40° abduction:<br/>ER to 15°<br/>IR to 45°</p>   | <p>Pendulum exercise</p> <p>Active-assisted supine FF as tolerated.</p> <p>ERN as tolerated.</p> <p>Scapular retraction</p> <p><b>**NO active ER or Extension or Abduction</b></p> | <p>Isometric exercise at 0° of abduction</p> <p>Ball squeezes</p> <p>Rhythmic stabilization (RS)</p>  | <p>Avoid ER in abduction.</p> <p>Caution to avoid excessive shoulder extension.</p> |
| <p>Phase 1<br/><b>2-5 weeks after surgery</b></p>   | <p>Supine FF as tolerated<br/>ERN limit to 30°<br/><u>Weeks 3 and 4:</u> Forward flexion as tolerated 135-140°<br/>Abduction to 90°<br/>ER in scapular plane to 30°<br/>IR in scapular plane to 60°</p> | <p>Active-assisted supine FF as tolerated.</p> <p>ERN as tolerated.</p> <p>Scapular retraction</p> <p>IR behind back starting week 3</p>   | <p>Isometric exercise at 0° of abduction</p> <p>Ball squeezes</p> <p>Rhythmic stabilization</p> <p>Prone row</p> <p>Prone extension to hip</p> <p>Sidelying ER to neutral</p> | <p>*Avoid ER in abduction.<br/>*ERN beyond 30<br/>*Extension.</p>                   |

|  |  |  |   |  |
|--|--|--|---|--|
| <p>Phase 2<br/>5 to 8 weeks after surgery</p> <p><u>Goals:</u></p> <p>*Gradual increase in ROM</p> <p>*Improve strength</p> <p>*Decrease pain/inflammation</p>   | <p><u>Weeks 5 and 6:</u></p> <p>Flexion to 145° to 160°</p> <p>ER at 45°<br/>Abduction: 50°<br/>IR at 45°<br/>Abduction: 60°</p>   | <p>ERN</p> <p>IR behind back</p> <p>Supine FF as tolerated.</p> <p>Horizontal adduction</p>  | <p>Continue phase 1 exercises:<br/>*Active-assisted progressing to active forward flexion with scapulohumeral rhythm<br/>Sidelying ER<br/>Sidelying scaption<br/>Prone row<br/>Prone extension<br/>Prone T<br/>Standing scaption<br/>Theraband ER/IR<br/>Proprioception drills</p>                                  | <p>Gentle mid-range ER in POS, gradually progress to coronal plane.</p> <p>Cautiously improve ERN.</p> |
| <p><b>Post-op Phase</b></p>  | <p><b>Range of motion</b></p>  | <p><b>Therapeutic exercise</b></p>   |   | <p><b>Precautions</b></p>  |
| <p>Phase 3<br/>8-12 weeks after surgery</p> <p><u>Goals:</u></p> <p>*Gradually restore full range of motion</p> <p>*Increase strength</p> <p>*Improve neuromuscular control</p> <p>*Enhance proprioception and kinesthesia</p> | <p>Gradually improve ROM all planes</p> <p><u>Weeks 7-9:</u></p> <p>Flexion to 160°</p> <p>Initiate ER/IR at 90° abduction</p> <p><u>Week 7:</u><br/>ER at 90 degrees abduction: 70°</p> <p><b>Weeks 8-9</b><br/>ER to 80° at 90° abduction<br/>IR at 90° abduction: 70°</p> <p><u>Weeks 10-14:</u><br/>Progress ROM to full</p> | <p>ER @ scapular plane</p> <p>Wall slide</p> <p>IR behind back</p> <p>Horizontal adduction</p> <p>Sidelying IR @ 90°</p> <p>Hands behind head starts 9<sup>th</sup> week postop</p> <p>Overhead pulley</p> | <p><u>Theraband exercises:</u> *ER, IR, forward, punch, shrug, dynamic hug, 'W's, Biceps curl, Seated row</p> <p><u>Dynamic exercises:</u><br/>*Continue phase 2 exercises<br/>*PRE 1-3 lb. as tolerated<br/>*Prone Y<br/>*Continue RS<br/>*Continue proprioception drills<br/>*Scapulohumeral rhythm exercises</p> | <p>Continue same as above<br/>Avoid excessive extension, and ER</p>                                    |



| Post-op Phase   | Therapeutic Exercises                           |   | Return to Sports                            | Precautions  |
|---|---|---|---|--|
| Phase 4<br>12-24 weeks after surgery<br><u>Goals:</u><br>Maintain full ROM<br>Improve muscular strength, power and endurance<br>Gradually initiate functional activities  | Gradually stretch to full ROM<br>ER @90 stretch | *Weight training can begin<br>*Continue theraband and dynamic strengthening programs<br>*Push-up progression<br>*Plyometric exercises | Initiate interval sport program per MD plan | See weight training precautions.<br>Continue to avoid excessive or forceful extension and ER |
| Phase 5<br>24 weeks after surgery onward<br><u>Goals:</u><br>Maintain shoulder mobility<br>Build muscular strength, power and endurance<br>Progress functional activities<br>Gradual return to sport activities | Full ROM  | Progress interval sport programs<br><br>Continue to observe precautions<br>Full return to sports gradually                            | Usually all sports                          | Weight training precautions.<br>Shoulder brace sometimes for collision sports.               |