

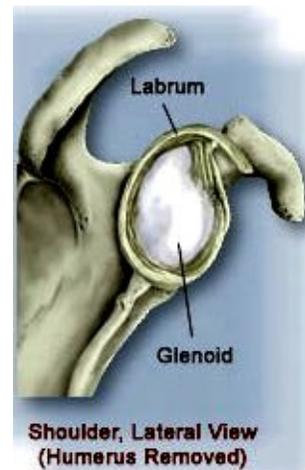
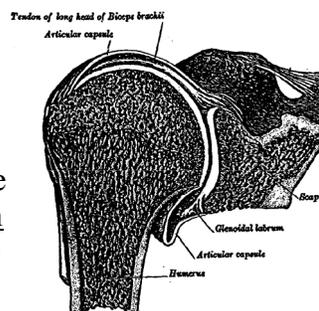
Arthroscopic Labral Repair (SLAP)

Brett Sanders, MD

Center For Sports Medicine and Orthopaedic
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Anatomy

The shoulder joint involves three bones: the scapula (shoulder blade), the clavicle (collarbone) and the humerus (upper arm bone). The humeral head rests in a shallow socket on the scapula called the glenoid. Because the head of the humerus much larger than the glenoid, a soft fibrous tissue labrum called the labrum surrounds the glenoid to help deepen and stabilize the joint. The labrum deepens the glenoid by up to 50 percent so that the head of the humerus fits better. In addition, it serves as an attachment site for several ligaments.

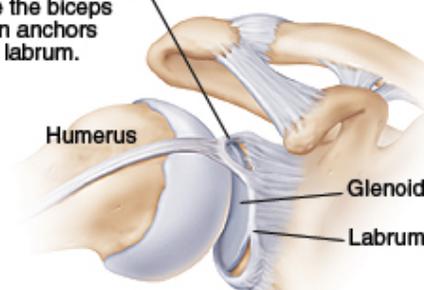


Injuries

Injuries to the labrum can occur from acute trauma or repetitive shoulder motion. Examples of traumatic injury include:

- Falling on an outstretched arm
- Direct blow to the shoulder
- Sudden pull, such as when trying to lift a heavy object
- Forceful overhead motions

A SLAP tear occurs where the biceps tendon anchors to the labrum.



Tears can be located either above (superior) or below (inferior) the middle of the glenoid. A SLAP lesion (superior labrum, anterior [front] to posterior [back]) is a tear of the labrum above the middle of the glenoid that may also involve the biceps tendon. A tear of the labrum below the middle of the glenoid socket that also involves the inferior glenohumeral ligament is called a Bankart lesion. Tears of the glenoid labrum often occur with other shoulder injuries, such as a dislocated shoulder (full or partial dislocation).

Signs and symptoms

It is difficult to diagnose a tear in the glenoid labrum because the symptoms are very similar to other shoulder injuries. Symptoms include:

- Pain, usually with overhead activities
- Catching, locking, popping or grinding

- Occasional night pain or pain with daily activities
- A sense of instability in the shoulder
- Decreased range of motion
- Loss of strength

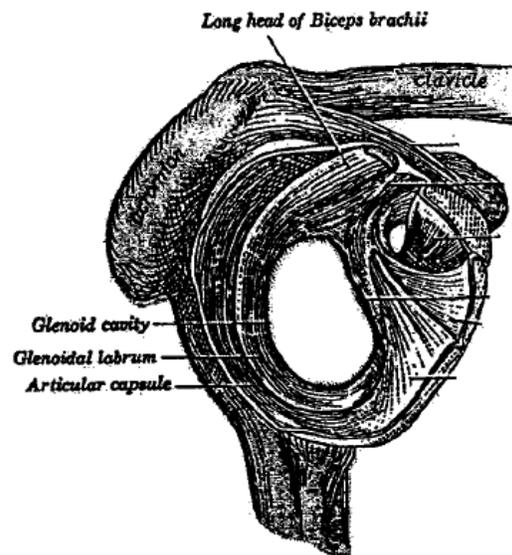
Treatment

Until the final diagnosis is made, Dr. Sanders may prescribe anti-inflammatory medication and rest to relieve symptoms. Rehabilitation exercises to strengthen the rotator cuff muscles may also be recommended. If these conservative measures are insufficient, Dr. Sanders may recommend arthroscopic surgery.

During the surgery, Dr. Sanders will examine the labrum and the biceps tendon. If the injury is confined to the labrum itself, without involving the tendon, the biceps tendon attachment is still stable. Dr. Sanders will remove the torn flap and correct any other associated problems. If the tear extends into the biceps tendon or if the tendon is detached, the result is an unstable biceps attachment. Dr. Sanders will need to repair and reattach the tendon-using suture anchoring devices. If there is a tear below the middle of the glenoid, Dr. Sanders will reattach the ligament to the glenoid (Bankart repair).

Rehabilitation

After surgery, you will need to keep your shoulder in a sling for three to four weeks. Dr. Sanders will also prescribe gentle, passive range-of-motion exercises. When the sling is removed, you will need to do motion and flexibility exercises and eventually start strengthening. Athletes can usually begin doing sports-specific exercises after twelve weeks, although it will be about six months before the shoulder is fully healed.



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PREOPERATIVE INSTRUCTIONS

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

- Preoperative office visit for history and physical examination and instructions
- Complete blood count (CBC)
- Electrocardiogram (EKG) if over the age of 40

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. Berksons' office for your time to report to the Surgical Day Care Unit the next day.
- **HAVE NOTHING TO EAT OR DRINK AFTER MIDNIGHT.**

The day of surgery

- Nothing to eat or drink
- Report as scheduled for surgery

Rehabilitation After Arthroscopic Labral Repair (SLAP) Phase 0: 0 to 2 Weeks after Surgery

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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 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 Dr. Berkson'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 a day.
3. Begin the pendulum exercise several times a day:

Pendulum exercise

Bend over at the waist and let the arm hang down. Using your body to initiate movement, swing the arm gently in small circular motions. 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. Berkson's office for any concerns, including, but not limited to, severe pain, fevers, chills or redness.

OFFICE VISIT: Please arrange to see Dr. Sanders in the office 10 days after surgery for examination and further instructions.

Rehabilitation After Arthroscopic Labral Repair (SLAP) Phase 1: 0 to 4 Weeks after Surgery

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Goals:

1. Protect the surgical repair
2. Ensure wound healing
3. Prevent shoulder stiffness
4. Regain range of motion

Activities:

1. Sling

Use your sling most of the time for the first 3 weeks. Remove the sling 4 or 5 times a day to do pendulum exercises (fig. 1).

2. Use of the operated arm

You may use your hand on the operated arm in front of your body but ***DO NOT*** raise your arm or elbow away from your body. It is all right for you to flex your arm at the elbow. Use of a computer or writing is all right as long as it is not painful.

3. 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 come away from the body. It is safe to wash under the arm in this position. This is the same position as the pendulum exercise.

Exercise Program

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:

Pendulum exercises	1-2 sets	20- 30 reps
Supine External Rotation	1-2 sets	10-15 reps
Supine passive arm elevation	1-2 sets	5-10 reps
Behind the back internal rotation	1-2 sets	5-10 reps

Exercises

Shoulder stretching is divided into two phases. **Phase 1, or passive range of motion**, is always performed with the uninjured arm assisting or helping the operated arm. **Phase 2, or active range of motion** with a terminal stretch, is performed by the operated arm, after 3 to 4 weeks, with the uninjured arm assisting for a “terminal stretch”. In most instances, wean off passive range of motion by using the uninjured arm in isolated incidents to assist the operated arm. The other major difference between passive and active stretching is the “terminal stretch”. During active stretching and upon reaching your “endpoint” of pain or movement, push the operated arm with the uninjured hand another 5—10 degrees for additional movement. This final movement is labeled “terminal stretch”. Maximum motion for each person remains the goal and terminal stretching will assist in achieving that goal.

All stretching exercises should be done slowly to maximize muscle and soft connective tissue involvement. When stretching, your goal is to reach the maximum range of motion for you. There is a reason for multiple sets and repetitions. This reason stems from “warming up” the shoulder so it can actually stretch further in the last few repetitions that you will do. The first few repetitions prepare the stiffened or swollen shoulder for initial movement.

Since there is more than one repetition per set, allow the first one or two repetitions to be warm—up reps, with very little pain. Gradually work into more and more range of motion.

It is also important to allow pain to be your guide. Move the arm to an “endpoint” (that endpoint is dictated by the amount of pain). Your goal is to increase the endpoint as often as possible until you have reached the full range of motion. As far as pain, you want to avoid excruciating pain, but “discomfort” is tolerated as long as the pain does not remain for a prolonged period of time. A basic rule to follow when stretching is, if the pain does not linger, you did not stretch too far.

1. 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.



2. Shoulder shrug

Shrug shoulders upward as illustrated.



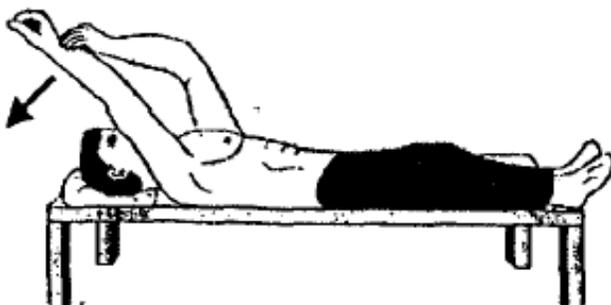
3. Shoulder blade pinches

Pinch shoulder blades backward and together, as illustrated.



4. Supine passive arm elevation

Lie on your back. Hold the affected arm at the wrist with the opposite hand. Using the strength of the opposite arm, lift the affected arm upward, as if to bring the arm overhead, slowly lower the arm back to the bed.



5. Supine external rotation

Lie on your back. Keep the elbow of the affected arm against your side with the elbow bent at 90 degrees. Using a cane or long stick in the opposite hand, push against the hand of the affected arm so that the affected arm rotates outward. Hold 10 seconds, relax and repeat.



6. Behind-the-back internal rotation

Sitting in a chair or standing, place the hand of the operated arm behind your back at the waistline. Use your opposite hand, as illustrated, to help the other hand higher toward the shoulder blade. Hold 10 seconds, relax and repeat.



Office Visit

Please arrange to see Dr. Sanders approximately 4 weeks following your first post-operative visit (6 weeks after surgery).

Arthroscopic Labral Repair (SLAP) Phase 2: 5 to 6 Weeks after Surgery

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Goals:

1. Protect the surgical repair
2. Improve range of motion of the shoulder
3. Begin gentle strengthening

Activities

1. Sling

Your sling is no longer necessary unless Dr. Sanders instructs you to continue using it (use it for comfort only).

2. Use of the operated arm

You should continue to avoid lifting your arm away from your body. You can lift your arm forward in front of your body but **not** to the side. You may raise your arm to the side, if you use the good arm to assist the operated arm.

3. Bathing and showering

Continue to follow the instructions from phase one and the instructions above.

Exercise Program

ICE

Days per week: 7

Times per day : 4-5 As necessary 15-20 minutes

STRETCHING / ACTIVE MOTION

Days per week: 7

Times per day : 3-4

Program:

Pendulum exercises	1-2 sets	20-30 reps
Supine External Rotation	1 set	10-15 reps
Standing External Rotation	1 set	10-15 reps
Supine passive arm elevation	1 set	5-10 reps
Seated-Standing Arm Elevation	1 set	5-10 reps
Behind the back internal rotation	1-2 sets	5-10 reps

Exercises

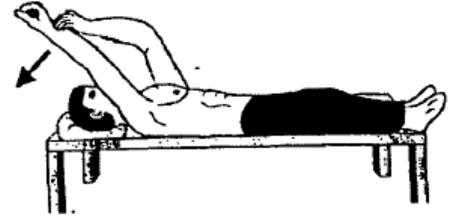
1. Pendulum exercise

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.



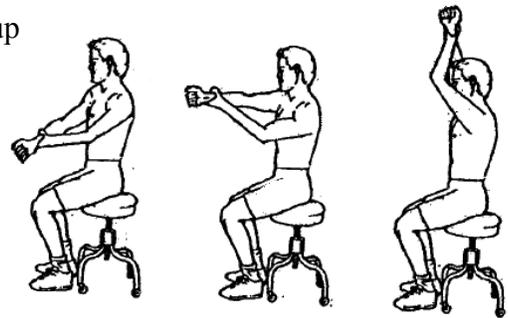
2. Supine passive arm elevation

Continue this exercise from phase two, stretching the arm overhead. Hold for 10 seconds.



3. Supine / Seated Forward Elevation (Overhead Elbow Lift)

During this phase, you can stand or sit in a chair. If it is easier, begin lying on your back until you achieve maximal motion, then use the standing or seated position. Assume an upright position with erect posture, looking straight ahead. Place your hands on either thigh with the operated thumb facing up and your elbow straight. In the beginning, this stretch is not performed solely with the operated arm, but use the uninjured hand for assistance going up and coming down. As you become stronger, you can raise and lower your arm without assistance. The operated arm should be lifted as high as possible, or to your endpoint of pain. Upon reaching that endpoint, take the uninjured hand and actually push on the outstretched forearm of the operated arm. Push 1 or 2 inches to achieve a “terminal stretch”. Hold 10 seconds per repetition. Release and slowly return to the start position.



4. Supine external rotation

Lie on your back. Keep the elbow of the affected arm against your side with the elbow bent at 90 degrees. Using a cane or long stick in the opposite hand, push against the hand of the affected arm so that the affected arm rotates outward. Hold 10 seconds, relax and repeat.



5. Standing external rotation

Stand with the operated shoulder toward a door frame as illustrated. While keeping the operated arm firmly against your side and the elbow at a right (90 degree) angle. By moving your feet, rotate your body away from the door to produce outward rotation at the shoulder.



6. Behind-the-back internal rotation

Sitting in a chair or standing, place the hand of the operated arm behind your back at the waistline. Use your opposite hand or pull on a towel to help the other hand higher toward the opposite shoulder blade. Hold 10 seconds, relax and repeat.



Office visit

Please arrange an appointment to see Dr. Sanders in 6 weeks (12 weeks from surgery).

Arthroscopic Labral Repair (SLAP) Phase 3: 6 Weeks after Surgery onward

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Goals:

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

Activities:

Use of the operated arm

You may now safely use the arm for normal daily activities involved with dressing , bathing and self-care. You may raise the arm away from the body, however, you should not raise the arm when carrying objects greater than one pound. Any forceful pushing or pulling activities could disrupt the healing of your surgical repair.

Exercise Program

STRETCHING / ACTIVE MOTION

Days per week: 7

Times per day : 1-2

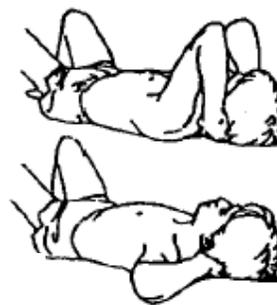
Pendulum exercises	1-2 sets	20- 30 reps
Standing External Rotation / Doorway	1 set	5-10 reps
Wall Climb Stretch	1 set	5-10 reps
Supine external Rotation with Abduction	1 set	5-10 reps
Standing Forward Flexion	2 sets	10-20 reps
Behind the back internal rotation	1-2 sets	5-10 reps
Supine Cross Chest Stretch	1 set	5-10 reps
Side-lying External Rotation / 1 lb.	1 set	10-20 reps
Prone Horizontal Arm Raises / 1 lb.	1 set	10-20 reps

STRENGTHENING / THERABAND

External Rotation	1-2 sets	15-20 reps
Internal Rotation	1-2 sets	15-20 reps
Standing Forward Punch	1-2 sets	15-20 reps
Shoulder Shrug	1-2 sets	15-20 reps
Seated Row	1-2 sets	15-20 reps
Biceps curl	1-2 sets	15-20 reps

1. Supine external rotation with abduction

Lie on your back. Place your hands behind your head as shown in illustration 1a. Slowly lower the elbows to stretch the shoulder toward the position shown in illustration 1b. Hold for 10 seconds, then return to the starting position. When your elbows are able to comfortably reach the surface that you are lying on, then you can start the 'corner stretch'.



2. Supine cross-chest stretch

Lying on your back, hold the elbow of the operated arm with the opposite hand. Gently stretch the elbow toward the opposite shoulder. Hold for 10 seconds.



3. Wall climb

Stand facing a wall, place the fingers of the affected arm on the wall. Using the fingers as "feet", climb the hand and arm upward. As you are able to stretch the hand and arm higher, you should move your body closer to the wall. Hold 10 seconds, lower the arm by pressing the hand into the wall and letting it slide slowly down.



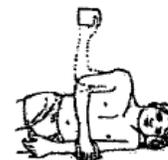
4. Standing forward flexion

Stand facing a mirror with the hands rotated so that the thumbs face forward. Raise the arm upward keeping the elbow straight. Try to raise the arm by hinging at the shoulder as opposed to raising the arm with the shoulder blade. Do 10 repetitions to 90 degrees. If you can do this without hiking the shoulder blade, do 10 repetitions fully overhead.



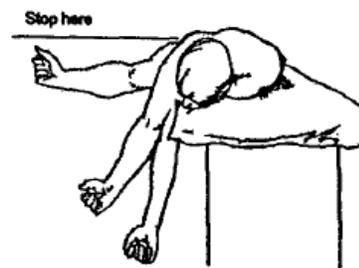
5. Side-lying external rotation

Lying on the non-operated side, bend your elbow to a 90 degree angle and keep the operated arm firmly against your side with your hand resting on your abdomen. By rotation at the shoulder, raise your hand upward, toward the ceiling through a comfortable range of motion. Hold this position for 1 to 2 seconds, then slowly lower the hand.



6. Prone or bent-over horizontal arm raise

Lie face down on your bed with the operated arm hanging freely off the side (or bend over at the waist as if doing pendulum exercises). Rotate your hand so that the thumb faces away from you. Slowly raise your arm away from your body through a pain-free range of motion. Hold that position for 1 to 2 seconds and slowly lower.



Theraband Strengthening

These resistance exercises should be done very slowly in both directions. Your goal is to achieve a maximum amount of strengthening while listening to your endpoint of pain. Obviously, we want to strengthen you throughout the full range of motion. It is very important that this exercise be done very slowly, not only when you complete the exercise (concentric), but also as you come back to the start position (eccentric). The slower the motion, the more maximal the contraction throughout a full range of motion.

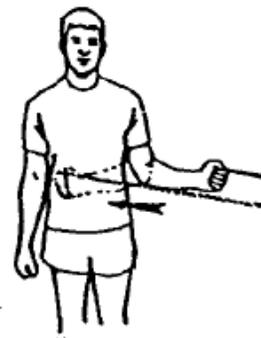
1. External Rotation

Attach the theraband at waist level in a door jamb or other. While standing sideways to the door and looking straight ahead, grasp one end of the band and pull the band all the way through until it is taut. Feet are shoulder width apart and the knees are slightly flexed. The injured elbow is placed next to the side with the injured hand as close to your chest as possible (think of this elbow as being a hinge on a gate). Taking the cord in the injured hand, move the hand away from the body as far as it feels comfortable (at least 90 degrees is our goal), or to where the endpoint of pain limits you. Return to the start position; if you would like, during future repetitions go a few more degrees to work more of a range of motion.



2. Internal Rotation

Attach the Theraband at waist level in a doorjamb or other. While standing sideways to the door and looking straight ahead, grasp one end of the handle and pull the cord all the way through until it is taut. Feet are shoulder width apart and the knees are slightly flexed. The injured elbow is placed next to the side and is flexed at 90 degrees (think of this elbow as being a hinge on a gate). Taking the cord in the injured hand, move the hand toward the chest as far as it feels comfortable, or to where the endpoint of pain limits you. Return to the start position



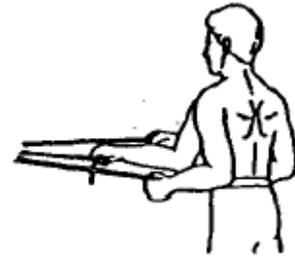
3. Shoulder Shrug

Stand on the theraband with your feet at shoulder width apart and. Look straight ahead. Next, straighten up, keeping the knees slightly flexed, with your arms straight down at the sides (palms in). Slowly raise the shoulders in a shrug (toward the ears), then rotate the shoulders backward in a circular motion, and finally down to the original position. This movement is completed while keeping constant tension on the cord.



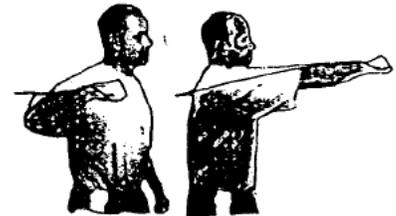
4. Seated / Standing Row

Attach the theraband in a door jamb or other. Sit or stand facing the door. Use a wide flat-footed stance and keep your back straight. Begin with the arms slightly flexed, hands together at waist level in front of your body, thumbs pointing upward, and with the cord taut. You are producing a rowing motion. Pull the cord all the way toward the chest. While pulling the cord, the elbows should be drawn along the side of the body until the hands touch the lower ribs. Always return slowly to the start position.



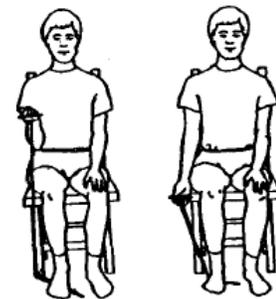
5. Standing Forward Punch

Attach the theraband at waist level in the door jamb. Facing away from the door, stand in a boxing position with one leg ahead of the other (stride position). Do not bend at the waist and remain in an upright position. If the right shoulder is the injured extremity, you will want to grasp the handle in the right hand and step out until the cord is taut. If you use the right hand, the left foot should be forward in the stride position. Begin with your right arm at waist level and bend the elbow at a 90 degree angle, with the elbow remaining near your side. Slowly punch forward while slightly raising the right arm in a forward, upward punching motion. The hand should reach approximately neck level with the right arm almost straight.



6. Biceps Curls

Place your feet on the cord, shoulder width apart, knees slightly bent. Keeping your elbows close to the sides of your body, slowly bend the arm at the elbow and curl towards the shoulder. Alternate arms while performing this exercise.



Office Visit

Please arrange an appointment with Dr. Sanders in 6 weeks (12 weeks post-surgery).