

## Shoulder Surgery

The purpose of this handout is to help you understand the way I perform shoulder surgeries and to help you plan for the recovery. Below are some general items that apply to most surgeries followed by more specific details about different procedures that may be performed depending on your situation. During our pre-operative discussion, I will write next to each procedure my prediction as to the likelihood of needing to do have that done. Please note; most of the decisions will be made during the surgery based on how your shoulder looks.

My usual **surgical procedure** is to start with an arthroscopic evaluation of the inside of the shoulder joint. To do this, I usually have to make 3 small incisions (around ¼ inch) on the shoulder. We start by evaluating the inside of the joint; the labrum around the joint, the biceps tendon, and the undersurface of the rotator cuff. If a lesion is found in the joint, such as a SLAP lesion or excessive scar tissue, it will be treated arthroscopically. We also begin the treatment of the rotator cuff and biceps tendons at that time if needed. Then the scope is moved out of the joint and into the space between the top of the rotator cuff and the overlying shoulder blade and collar bone. This allows treatment of structures in that area and evaluation of the upper surface of the rotator cuff. If a rotator cuff repair and/or a biceps tenodesis (see below) are needed, it is usually done arthroscopically as well. However, if it is best for you and your shoulder, I sometimes make the repairs through a mini-open incision approximately 2-inches long on the side of the shoulder. Specific treatments are listed below.

To help control pain immediately after surgery, most patients will have local anesthetic injected in the shoulder itself. In rare circumstances, we will use a nerve block. You will be given an ice-water device to wear on your shoulder as well. **After surgery:** The vast majority of my patients spend the night for pain control and leave the next morning. Since they leave the hospital in less than 24-hours, it is still considered an out-patient procedure. Please come prepared to stay if necessary. **Before you go home,** physical therapy will be in to see you to show you your home exercise protocol and to give you some tips on how to perform your daily activities in a way that will not damage your shoulder. It is helpful if one of your family members can be there for this session so that they can help you remember what you need to do when you get home.

### **Specific procedures:**

- S.L.A.P. repairs** involve a repair of the labrum (suction cup) on the upper part of the shoulder joint. The name is short for **s**uperior **l**abral **a**nterior **p**osterior lesion. One of the biceps tendons attaches to this labrum. If the

labrum is only frayed, it can be corrected with shaving of loose and torn tissue. But if it is detached or unstable, it needs to be addressed. If it is not completely detached, we can eliminate the pain by performing a biceps tenotomy or tenodesis (see below). However, if the labrum is falling into the joint, it requires the use of suture anchors to sew the tissue back down with arthroscopic techniques. To allow for the repair to be performed, another small incision on the shoulder is required.

- **Biceps tendon problems:** Recent studies have greatly changed how this structure is managed during shoulder surgeries. One very good study showed that when a shoulder has a rotator cuff tear, the biceps tendon is abnormal 95% of the time. If your biceps tendon is abnormal, it can be a major pain generator and it should be addressed. There are two basic ways to treat the tendon problem: release it (tenotomy) or release it and reattach it somewhere else (tenodesis).
  - **Tenotomy:** This is a very effective way to manage biceps pain. If you have a relative or friend that has had his/her “biceps rupture”, this procedure does surgically what happened to them naturally. If you have this release, you have about a 50-70% chance of developing a balling up of one of the biceps muscles and having a much more rounded shape to the biceps involved than on the other side. A common name for this is a “Popeye” deformity. You will lose about 13 % of your maximum ability to twist your forearm out (supinate) after this procedure. But, since few people are functioning at their maximum capacity (particularly prior to surgery), few notice this difference. People who do a lot of that turning type of motion (turning screws, rotating valves, etc.) can lose some of their endurance for this motion and have more cramping in the biceps than if a tenodesis is performed. If no other soft tissue repair is done at the same time as a tenotomy, you will follow the recovery after shaving/release schedule (see page 4).
  - **Tenodesis:** Tenodesis is the release of the biceps from the labrum followed by reattaching it to another spot on the humerus (arm bone). In most cases, I perform this task arthroscopically through another small incision on the upper side of the arm. However, sometimes it is done with a mini-open incision. It does not return the biceps to normal function, but it keeps the “Popeye” deformity from forming. One still loses some of the maximum capacity for twisting the arm out with this as well, but it is a little less – on the order of 9%. For the same reasons as with the tenotomy, few people notice this difference. There is a reduced risk of cramping and often more endurance with this procedure compared to tenotomy. If a tenodesis is performed, you follow the recovery after soft tissue repair/tenodesis schedule (see page 4). Unless you tell me

otherwise, if I have to do a rotator cuff repair, I will perform a tenodesis at the same time.

- **Impingement** is where the bone hook on the front of the part of the shoulder blade that overlies the rotator cuff (the acromion) is scuffing (impinging on) the rotator cuff and/or biceps tendon as the shoulder moves. This problem is treated by removing part of the acromion itself. This procedure is referred to as acromioplasty. This is done arthroscopically. Often it is known if you will need this procedure from the preoperative x-rays, but sometimes the decision is made intraoperatively.
- **Acromioclavicular (A/C joint) arthritis** is pain and/or popping in the joint between the acromion and the clavicle. If you have had enough pain in this area and you are having shoulder surgery, I usually recommend having the end of the clavicle removed arthroscopically. This procedure is commonly referred to as a Mumford procedure. In most cases approximately 1-cm (a little less than ½ inch) of bone is removed to keep the bones from rubbing together and reduce the pain. This procedure is usually pain reducing as opposed to pain eliminating. Most patients will still have some popping and pain after the procedure, but far less often and far less painful. The decision as to whether to do the Mumford procedure or not will be made by us together before surgery.
- **Rotator cuff tears** can vary greatly in size, location, and severity. As a result, the treatment varies as well. If the rotator cuff tear involves less than 50% of the thickness of the tendon, trimming of the frayed edges is all that is recommended. This is done arthroscopically. If it is more than 50% torn, a repair is needed. The vast majority of the time I will do the repair arthroscopically. This may require one or two more small incisions depending on type of tear. In rare instances the type of tear or the anatomy of the patient's shoulder makes it best for us to do the repair with mini-open techniques. Some important information about arthroscopic and mini-open techniques is listed below:
  - Mini-open techniques in my experience are equal to arthroscopic techniques in postoperative pain, rehab protocols, etc. They require no additional muscle detachments. Mini-open techniques are much less invasive than older standard "open" techniques.
  - Sometimes mini-open techniques can be done faster than all-arthroscopic techniques particularly with old, retracted tears, thus reducing your time under anesthesia.There are times when part of the rotator cuff will be repaired arthroscopically and a different part will be repaired through mini-open techniques.
- **Massive or chronic rotator cuff tears:** very large or long standing (chronic) tears can sometimes be un-repairable. For example: too shredded to sew through or so retracted and scarred down that it cannot be pulled out to its proper position. Sometimes these will be managed by just trimming off

the rough edges (debridement). Other times we will use a donated (cadaver) graft product to cover and/or reinforce the repair. Pain relief is the primary goal with this type of tear. In massively torn and retracted tears there is a new technique known as "superior capsular reconstruction" that can be done using cadaver tissue to reduce pain and improve function for most patients. This technique usually requires the mini-open approach. Unfortunately, complete return of strength with these types of tears is very unlikely.

**Recovery and rehabilitation** after shoulder surgery varies depending on the procedure performed, but basically there are two different protocols:

- **Recovery after shaving/release procedures** – such as a SLAP lesion that only requires trimming, acromioplasty, Mumford procedure, biceps tenotomy, and <50% thickness rotator cuff tear – basically involves letting the shoulder recover from the insult of surgery. You will be given a sling for comfort and may stop using it once you feel comfortable enough. Activity is slowly increased as tolerated and shoulder strengthening exercises are started as soon as your comfort allows. Most people are back to moderate lifting in 4-5 weeks. Heavy lifting or throwing often takes several more weeks and varies widely between different people.
- **Recovery after tissue repair/tenodesis** – such as rotator cuff repairs, biceps tenodesis, or SLAP repairs – is much more involved. Good rehabilitation is *essential* for a good result after tissue repair. If you do not do enough, you may end up with a stiff, weak shoulder. If you do too much, you may pull the sutures out of the tissue and cause the repair to fail. If the sutures get pulled out, they tend to rip through the tissue making the tears larger and more difficult to repair the second time.
  - The **first four weeks** you will have the sling on at all times except when bathing or changing clothes. You will be shown a home exercise protocol that is to be done several times a day. You will have a 1-2 lb. lifting limit with the surgical arm in the sling.
  - **During weeks 4-8** you will only wear the sling as needed for your comfort. You will start working with therapy on flexibility (range of motion). You will have a 1-2 lb. lifting limit out of the sling and you will not be doing things above chest level or away from your body with your surgical arm.
  - **Starting on week 8** strengthening exercises will be shown to you and you will continue to work on your flexibility. You are still limited to 1-2 lb. lifting with the surgical arm with daily activities, but you will be able to start reaching above your head and away from your body.
  - **Starting 12 weeks after surgery** you will be allowed to lift as much as you can comfortably as long as your arm is along side your body. Once your arm moves away from your side, your limit will be 4-5 lb.

Exercises are usually done mostly at home by this point with infrequent visits to the therapist.

- **At approximately 4 ½ - 5 months**, I will let you lift anything you can without pain in any direction, but you are not to make sudden, hard movements with your operative arm such as throwing, swinging a club, or pull-starting a lawnmower until 6 months after surgery.
- **At 6 months** after surgery you can increase your activities as comfort allows. It is unlikely you will have full strength at this point. Usually it takes another 6-9 months to completely recover, but you will not damage the repair at this point just by using your arm and shoulder. It would take an injury to re-tear the tissue(s). In some cases the rotator cuff can be so badly torn or torn for such a long time that complete return of strength is impossible. But, even in those cases gains in strength can be seen for up to 18 months after surgery.

□ **Risks of surgery:**

- General risks are small but include, and are not limited to, anesthesia complications (on very rare occasions – death), infection, nerve injury, and excessive bleeding.
- Stiffness is not an uncommon problem and one you will need to work hard to avoid. If you have not regained enough motion after 3-4 months, we may have to take you back to the operating room for arthroscopic debridement and/or manipulation under anesthesia.
- Incomplete return of strength after soft tissue repair/tenodesis is expected as detailed above in the tenotomy and tenodesis sections. With rotator cuff repairs, the reason most patients don't get their strength back (except in cases of massive/chronic tears) is usually due to people not continuing their exercises long enough. It takes 10-18 months of doing your strengthening exercises to regain all of the strength back. Just being "active" is not enough to take the place of your exercises.
- As stated above in the A/C joint section, the Mumford procedure is usually a pain reducing – not a pain eliminating procedure. Most of the other procedures are usually very successful at eliminating pain, but there is no way to know exactly what your result will be.

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**gregory m. behm, md**  
**Ravalli Orthopedics & Sports Medicine**  
**312 Fairgrounds Road**  
**Hamilton, MT 59840-3126**  
**Phone: (406) 361-7680**  
**Salmon Phone: (208)756-5790**

Gregory M. Behm, MD  
Ravalli Orthopedics & Sports Medicine