BACKGROUND

Most rotator cuff tears in young active patients are treated surgically, with good to excellent results in the vast majority of patients. However, tears that go undiagnosed for a prolonged period of time gradually become more and more retracted (pulled far away from where they previously attached to the bone) and scar into place. The associated muscles often atrophy or waste in a way that can’t return to normal muscle tissue. Patients with this problem usually present with a combination of pain and weakness. Without a functioning rotator cuff, the deltoid muscle can’t function properly as it lacks a fulcrum to pull against. When the deltoid contracts in an attempt to lift the arm, the humerus instead elevates, running into the upper shoulder blade (acromion). This creates pain and an inability to lift the arm effectively. Other tears that don’t do as well with a primary surgical repair can be seen if a tear of a previously repaired rotator cuff occurs as the tissue is not as healthy as in a fresh or new tear. In both the setting of a chronic tear or a recurrent tear of tissue previously repaired, success rates with a primary repair of re-attaching the rotator cuff tendon to the bone are lower and warrant consideration of other surgical treatment options if conservative treatment with things like physical therapy or possibly corticosteroid injections into the joint are not effective at improving patient pain or function.
In older patients, a good solution to this problem is reverse shoulder arthroplasty, or RTSA. This procedure changes the mechanics of the shoulder, so that the rotator cuff is no longer needed for elevating the arm. The deltoid can function more independently and lift the arm again. Unfortunately, these devices were not meant for the heavy demands younger people typically place on them. Therefore, RTSA is not a great option in patients under 50 or those who place high demands on their shoulder. Younger patients with very symptomatic irreparable rotator cuff tears can be treated with tendon transfers, to reroute another tendon (such as the latissimus dorsi or the pectoralis major) to take the place of the functioning rotator cuff. However, results from tendon transfers vary widely, and rehabilitation is often very lengthy and complicated.

THE RATIONAL FOR SUPERIOR CAPSULAR RECONSTRUCTION (SCR)

Because these younger patients had no great option for treatment, surgeons began searching for an alternative. Japanese surgeon Teruhisa Mihata developed the superior capsular reconstruction (SCR) in 2007. Like the RTSA, this procedure changed the mechanics of the shoulder so the deltoid could lift the arm irrespective of the absent rotator cuff. However, unlike the RTSA, SCR does not replace any part of the joint surface and there is no implanted metal or plastic components. It can also be done arthroscopically (thru smaller incisions and the aid of a camera (scope) placed into the joint). Therefore, pain relief is more immediate, recovery is faster, and ultimate activities are more unrestricted, since there are no joint replacement parts to wear out. In addition, this procedure does not “burn any bridges”. In other words, another shoulder procedure could still be performed in the future (including another SCR). This makes SCR a very attractive option for younger patients with irreparable rotator cuff tears, or older patients who otherwise don’t need a joint replacement (don’t have any wear or arthritis of the shoulder joint surfaces).
In an SCR, allograft tissue [usually cadaveric dermis (very thick skin tissue)] is used to attach the upper humerus (arm bone) to the upper glenoid (shoulder socket). This tissue does not have significant cellular tissue or risk of disease transmission of viruses. The procedure is usually done as an outpatient like most other arthroscopic shoulder procedures.

**REHABILITATION AND RECOVERY**

The process of physical therapy and rehabilitation is similar after SCR as compared to traditional rotator cuff repair. Time is needed for the allograft (implanted tissue) to begin to heal to the two bony attachment sites. There is limited over shoulder use of the arm for five months post-operatively to let this fully heal which is slightly slower than a primary rotator cuff repair as the graft takes longer to incorporate fully as opposed to your own tissue healing. However, once healing has progressed well, the strengthening phase of the rehab often goes faster, because there is no need to strengthen the small rotator cuff muscles. Strengthening focuses instead on the deltoid, which tends to rehab faster given its large size and bulk.

**POST-OPERATIVE INSTRUCTIONS**

**Wound Care:**
- Remove bulky operative dressing in 2 days.
- Keep steri-strips (white band-aids covering incisions) in place until they fall off or they are removed at your first post-operative visit.
- You may shower after you remove your operative dressing.
- Do not scrub the area; just allow water/soap to wash over you.
- Pat incision dry afterward, do not rub.
- Do not bathe/swim/soak incisions until they are completely healed (approximately 4 weeks after surgery).

**Ice:**
- We recommend that you use the ice wrap/cryocuff on a consistent basis for the first 48-72 hours. This will help reduce post-operative swelling. After that, use as necessary. If the wrap is bulky or you did not have one applied in the operating room, you may use ice packs. Apply for 20-30 minutes and then remove for a break period of at least 30 minutes to prevent frost-bite to skin.
- While the bulky operative dressing is in place you may leave on for longer duration as long as it is not in contact with your skin but with the dressing.

**Sling & Weight bearing status:**
- With a Superior Capsular Reconstruction, you will be placed in a sling.
- You need to wear the sling for 6 weeks. We will discuss rehab details further at your first post-operative appointment. It should only be removed for showering and for your exercises.
- You should not bear weight with your arm or use your arm to lift anything more than 2.5 lbs. until 3 months after surgery.
- You may not actively use your arm above shoulder level until 4 months post-op although you will be allowed to passively stretch in this area.
- Strengthening above shoulder level will begin at 5 months post-op
- Unrestricted activity will be allowed at 9 months post-op after full graft healing and incorporation

**Physical Therapy:**
- Formal physical therapy will be ordered by your orthopedic surgeon the day of your surgery. You should start formal physical therapy approximately one week after surgery.
- To schedule an appointment please either schedule in person in clinic upon scheduling your surgery or please access our website at [www.tcomn.com](http://www.tcomn.com) to review available locations close to you and find their specific appointment scheduling numbers. We have many different locations for patient convenience.
- If you need a referral to be seen outside of TCO, please contact Sarah at 763-302-2107 for a faxed order and protocol to be sent to your preferred location

**Pain Control:**
Day of Surgery
➢ You have been given a regional anesthetic block prior to your operation. This will wear off in the evening following your surgery.
➢ You may find it beneficial to sleep in a recliner or propped up on pillows for the first several days after surgery.

Narcotics
➢ You have been prescribed narcotic pain medications.
➢ If provided, you should take the long acting pain medication (oxyconttin/MsContin twice a day for 10 days after surgery. Take the first pill in the evening after your surgery (before your block has worn off). This is a long-acting pain medication and not for immediate pain relief. Not all patients will receive a long acting pain medication – this will be provided if safe and appropriate.
➢ All patients are provided with a short acting pain medication (e.g. dilaudid, oxycodone or hydrocodone) for pain
➢ Use the medication only as prescribed. Take it with food.
➢ Do not drive or use any type of heavy machinery, drink alcohol, make any life-changing or legal decisions (i.e. sign a will), or participate in activities that require a lot of physical skill.
➢ Take a stool softener, such as Colace, while taking the narcotic medication, because narcotics may cause constipation.

Non- Steroidal Anti-Inflammatory Medications:
➢ Please take an over the counter non-steroidal anti-inflammatory such as Motrin, Advil, Ibuprofen (400-600 mg every 8 hours) or Aleve (220 mg every 12 hours) for additional pain control for two weeks and then as needed.
➢ Take only if you do not have a contraindication to taking this medication (i.e. allergy to the medication, stomach ulcers or kidney problems).
➢ Take this medication with food, and try to stagger the times you take this medication with your pain medication. This may help decrease the chance of stomach upset.

Driving:
➢ You may resume driving when approved by your orthopedic surgeon. We do not recommend driving while wearing a sling.

Return to Work:
You may return to work as soon as you are comfortable. This is dependent on your job type. You will not be able to do any work with your arm out a sling for 4-6 weeks post-op. You will not be able to return to work with any heavy lifting until 7-9 months post-op. Return to work notes if required can be obtained from our office either at a post-op appointment or by contacting our office. If you have any disability paperwork or FMLA forms to be filled out, please make sure you include any specific planned dates of leave when you drop off or send in paperwork to improve our accuracy.

Follow-up Appointment:
- Your first post-operative appointment will be scheduled 10 – 14 days following your surgical procedure. Please make sure you have a post-op appointment arranged at the time of your surgery scheduling. If you need to change this at any point, please contact Sarah to do so.

****Signs & Symptoms to Immediately Report****

- Call 911 and go to the nearest hospital if you are having chest pain or trouble breathing.

Call the office at: 763-302-2107 to report any of the following:
- Persistent fever (101 or greater)
- Sudden increase in pain and swelling
- Wound redness or drainage
- Increased skin temperature around incision
- Deep calf pain and swelling
## REHAB PROTOCOL after SUPERIOR CAPSULAR RECONSTRUCTION

<table>
<thead>
<tr>
<th>Post-op phase</th>
<th>Sling</th>
<th>Range of Motion</th>
<th>Therapeutic Exercise</th>
<th>Precautions</th>
</tr>
</thead>
</table>
| **Phase 1**   | Per MD instructions. Pendulum exercises several times a day | Passive ROM only | Pendulum exercise & Passive supine FF as ERN as tolerated. Scapular retraction. IR behind back may start after 4 weeks. | *No active elevation*  
For first 6 weeks post-op  
*No Lifting of Objects*  
*No Excessive Shoulder Extension*  
*No Excessive Stretching or Sudden Movements*  
*No Supporting of Body Weight by Hands* |
| 0 to 6 weeks after surgery | | | Ball squeezes ROM for elbow, forearm, hand | |
| Goals: | | | | |
| *Maintain integrity of the repair*  
*Do not overstress healing tissue*  
*Gradually increase passive range of motion*  
*Diminish pain and inflammation*  
*Prevent muscular inhibition* | | | | |
| **Phase 2**   | D/C | Gradually progress to full PROM all planes | ER @ 0° Wall slide IR behind back Horizontal adduction Hands behind head ER at 90° abduction stretch Sidelying IR @ 90° Avoid Overhead Pullies | *Active-assisted arm elevation progressing to Active elevation with scapulohumeral rhythm. No AROM above shoulder level*  
*Sub-max Isometric Rhythmic stabilization*  
*Proprioceptive drills*  
*Dynamic exercises*  
Sidelying ER Sidelying scaption Prone row Prone T Prone extension Standing scaption Prone scaption  
| No resisted exercises in coronal plane ABDuction |
| 6 to 12 weeks after surgery | | | | |
| Goals: | | | | |
| *Maintain integrity of the repair*  
*Do not overstress healing tissue*  
*Gradually increase passive range of motion to full*  
*Re-establish dynamic shoulder stability*  
*Re-establish scapulohumeral rhythm* | | | | |
| **Phase 3**   | D/C | Maintain full PROM  
May begin AROM above Shoulder level At 4 months postop | ER at 90° abduction Stretch ER @ 0° Wall slide IR behind back Horizontal adduction Hands behind head Sidelying IR @ 90° Abduction | *Theraband exercises: ER, IR, forward, punch, shrug, dynamic hug, ‘W’s, biceps curl, seated row*  
*Dynamic exercises: Continue from phase 2; limit resistance to maximum 3 lb.*  
*Proprioception drills*  
*Scapulohumeral Rhythm exercises*  
| Continue same as above.  
No weight training.  
May begin AROM above Shoulder level At 4 months postop |
<p>| 12 to 18 weeks after surgery | | | | |</p>
<table>
<thead>
<tr>
<th>Post-op Phase</th>
<th>Stretching Exercises</th>
<th>Strengthening exercises</th>
<th>Return to Sports</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 4&lt;br&gt;18-26 weeks after surgery</td>
<td>Continue previous stretches</td>
<td>Continue dynamic exercises and theraband exercises from phase 3&lt;br&gt;Optional: Theraband: add ‘T’s, diagonal up and down&lt;br&gt;Add Prone’U’s</td>
<td>Per surgeon</td>
<td>Weight training per surgeon. See weight training precautions.&lt;br&gt;Continue to avoid excessive force on the shoulder</td>
</tr>
<tr>
<td>Phase 5&lt;br&gt;26 weeks after surgery onward</td>
<td>Continue all previous stretches</td>
<td>Continue above Plyometric exercises</td>
<td>Interval sports programs can begin</td>
<td>Weight training precautions.</td>
</tr>
</tbody>
</table>