

## **ARTHROSCOPIC SURGERY INSTRUCTIONS**

### **Dr. Horinek's After Surgery Instructions & Expectations**

My goal is to help you achieve the best experience and functional result after surgery possible. I believe part of that is having clear expectations about your postoperative course. I don't want you to be surprised after surgery! This information is meant to give you an overview of common questions that arise. If you have any questions before or after surgery, myself or a member of my team is available.

### **What you can expect from me**

You will get my best effort to make you better. I stay up-to-date on the latest research through national and international conferences and regular journal reading. You will get the best that is currently available in the care of the shoulder. You can also expect clear communication and that I or a member of my team will be available to answer questions.

### **What I expect from you**

**READ THIS FORM.** Follow my rehabilitation protocols – they are based on what I believe is the best available research. If you have an issue or comment, please let us know first. We can only make your experience and others better if we hear from you!

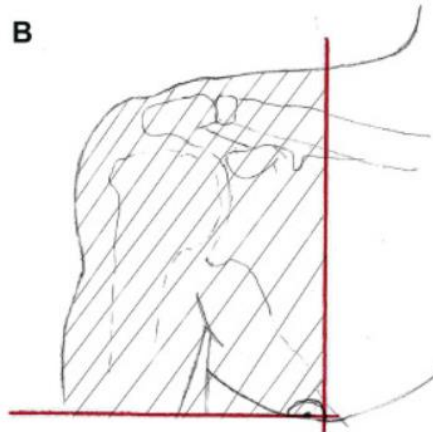
### **PRIOR TO SURGERY**

Surgery centers require a clinic visit within 30 days of surgical intervention. Because of this you may have an additional preoperative visit 1 to 2 weeks prior to surgery. This is to go over the surgery again, be fit for a sling (which you must bring to surgery), provide prescriptions for medications after surgery, and have a pre-rehab visit. Patients who have a shoulder replacement may also have a pre-surgery visit at the hospital.

If you take Aspirin, Ginkgo Biloba, and/or Fish Oil, please stop these medications 1 week prior to surgery. These medications can cause bleeding during surgery.

Infection prevention is a big part of surgery. While the risk of infection after shoulder surgery is low, we take every measure possible to prevent it. At least one study suggests that the risk may be reduced by applying 5% to 10% Benzoyl Peroxide to the shoulder for 3 days prior to

the day of surgery. This is an inexpensive gel that you can buy at a pharmacy. One product is **Clearasil "Daily Clear Acne Cream"** with is 10% benzoyl peroxide. After showering, apply the gel to the shoulder area for the 3 days before surgery. Apply in the morning and the evening for a total of 6 applications. Below is a picture indicating where gel should be applied.



Please do not eat or drink anything after midnight the evening prior to surgery – if you do, your surgery may be cancelled. The exception is essential medications which can be taken with a sip of water the morning of surgery. If you take any blood pressure medications these should be taken on the day of surgery. The one exception is ACE inhibitors (such as Lisinopril), which should not be taken. Diabetes medications should not be taken since you won't be eating. All nonessential medications (allergy medications, cholesterol meds, antidepressants, vitamins, etc.) do not need to be taken.

### **THE DAY OF SURGERY**

Arrive to the hospital or surgery center at your scheduled arrival time. If your arrival time changes, you will be notified by the facility or my staff.

In most cases this surgery requires a general anesthetic which means that you will be asleep during the procedure.

Shoulder arthroscopy is done on an outpatient basis, which means you get to go home the day of surgery. You should anticipate the need for help at home for the first few weeks after surgery and make arrangements for a ride home after surgery.

## **AFTER SURGERY**

### **Prevention of Deep Vein Thrombosis (DVT)**

The risk of leg clots or DVT is low after shoulder surgery but we make every effort to prevent them. We take the following measures:

- 1) All my patients who have shoulder surgery will have leg stockings and pumps during surgery that are meant to lower the risk of leg clots. All patients should wear the leg stockings for 2 days after surgery.
- 2) It is advised that you take frequent walks after surgery since immobility is a risk factor for leg clots.
- 3) Take Aspirin 81 mg daily for a minimum of 2 weeks and maximum of 6 weeks after surgery

If you have a previous history of blood clots **you should inform us** so we can also provide you with a prescription medication to lower the risk of DVT.

### **Care of Surgical Incisions**

You will have several small incisions which will be covered by a bandage after surgery. The bandage can be removed the day after surgery. Remove all of the dressings until you see the incisions which will be covered with surgical glue. Each incision is also covered with a nonadhesive dressing that looks like a netting. This prevents the glue from sticking to gauze pads. This should also be removed. You can shower the day after your surgery without your sling. Water can pass over the wound and you can pat dry. To wash under your armpit, lean over and dangle the arm at the side. After your shower, Band-Aids may be applied to each incision. Once the incision is completely dry (a few days after surgery at most), no Band-Aids are needed. Your stitches will be absorbable so you will not have to put up with suture removal! Please do not soak in a pool or hot tub until after the first postop appointment (2 weeks).

A wound infection after arthroscopic shoulder surgery is extremely uncommon (1 in 5,000 in one report). The wound should be dry by 3 to 5 days after surgery. If your wound is draining beyond this, and especially if there is a lot of redness or you have a fever, this is a sign of wound infection and you should call us. However, bruising is very common after shoulder surgery. It is common for the front of the shoulder (chest and biceps) to turn black and blue at about 3 to 5 days after surgery. This is temporary and resolves within a couple of weeks.

## Medications

In general, resume all your regular medications immediately after surgery. A few other medications should be considered:

- 1) Vitamin D. Vitamin D is important to bone health and studies also suggest that Vitamin D deficiency can be associated with poor healing after rotator cuff repair. In this region of the country most patients are Vitamin D deficient. Therefore, while I don't check Vitamin D levels on my patients I do recommend that you take Vitamin D (800 IU) for a month prior and for at least 12 weeks following shoulder surgery. Also, it turns out that daily Vitamin D lowers the risk of hip fracture so there are other good reasons to take it.
- 2) Vitamin C. At least one study has shown that Vitamin C can lower pain after surgery. There is also evidence that it can improve tendon healing. Therefore, I think it is reasonable to take 500 mg of Vitamin C twice daily for 6 weeks after surgery.
- 3) NSAIDs. Non-steroid anti-inflammatories (Ibuprofen, Motrin, Naproxen, Mobic, Celebrex, Aleve, etc.) can modulate rotator cuff healing. The timing is important. It appears that if given early they can decrease tendon healing. Therefore, I advise avoiding NSAIDs for 6 weeks following surgery other than the first 5 days. However, after the early phase NSAIDs may actually help remodeling. Therefore from 6 weeks to 12 weeks after surgery NSAIDs may actually be advantageous and it can be considered to take them during this period as long as they are tolerated (no problems with upset stomach). Options are ibuprofen 600 mg three times daily or Aleve 2 tabs (440mg) twice daily from 6 to 12 weeks after surgery.
- 4) Magnesium. Clinical studies have shown that Magnesium reduces pain after surgery. Additionally, lab studies suggest that Magnesium can improve tendon healing. Magnesium is also important for Calcium and Vitamin D absorption. Interestingly, about 50% of the US population does not get enough Magnesium in their diet. Therefore, I believe it is reasonable for most people to start taking Magnesium the month prior to surgery and for 12 weeks following surgery. Dose recommendations are anywhere from 400 mg a day to 500 mg twice daily. One option is to take a Calcium, Vitamin D, Magnesium complex. One such supplement is available here:  
<https://www.amazon.com/Country-Life-Target-Mins-Vegetarian/dp/B00117ZTNY>  
This complex provides 400 IU of Vitamin D, 1000 mg of Calcium, and 500 mg of Magnesium per dose. Therefore, one could take this supplement twice a day to satisfy the recommended amount of Vitamin D and also get Magnesium.

## **Bruising, Swelling, Rashes, Warning signs, etc.**

### *Bruising*

Bruising after shoulder surgery is normal. Don't be alarmed if your arm turns black and blue. Blood follows gravity, so it is normal for this to happen in your arm around your biceps (front of your shoulder) or chest. This usually occurs 3-7 days after the surgery.

### *Swelling*

Some degree of swelling is also normal. Often the swelling occurs around your sling. We encourage hand and elbow exercises to help this. Also, if you have your arm at your side and seated, such as when watching TV, it is okay to remove the sling to relieve pressure on your arm which may be causing the swelling to pool. Swelling that is very painful, especially on the inside of your arm with extension of the swelling down the entire hand is not normal and you should call in if this happens.

### *Rashes*

A red rash under the armpit is typically fungal and can occur from the arm being close to the chest. It is okay to take the sling off when sitting down and provide some room between your inner arm and chest wall. Make sure you wash the area and dry the armpit completely as fungal rashes thrive in moist environments. You can consider an antifungal cream over the counter

A rash over the shoulder is typically due to adhesives. This will resolve with time and avoidance of bandages. Consider Benadryl and/or an over the counter steroid cream (Hydrocortisone 1%).

A rash over entire upper extremity extending to the hand is usually from an allergic reaction to the skin prep (Chloraprep). This is uncommon but can occur. If it occurs it is important to take note so you can avoid this skin prep in the future (Chloraprep is the most common skin prep). Take Benadryl and we can provide a prescription topical cream (Triamcinolone). This may take 10 days to 2 weeks to resolve.

Another rare but important thing to watch for is shortness of breath with chest pain. While mild shortness of breath can occur after a nerve block (because of numbing the phrenic nerve to the diaphragm) please notify us of severe shortness of breath or chest pain. Shortness of breath due to the nerve block should resolve when the nerve block wears off (18 hours on average). If you have a fever over 101°F let us know. On the other hand, a lower grade fever within the first few days after surgery is not uncommon.

## Pain Control & Prescriptions

Our goal is to control and ease your pain, but surgery is not a pain free process. The good news is that 1/3 of our patients do not require any narcotics after postop discharge.

### *Nerve Block*

You will also receive an injection of a numbing medication (like at the dentist) which will provide good pain control for roughly 12-18 hours after surgery. It is your choice if I place this “locally” into the skin and nerves around the shoulder during the surgery or if you have a “nerve block” (interscalene block) by the anesthesia team. The nerve block is placed in the neck prior to the surgery. Studies show that there is no difference between the 2 options 24 hours after surgery. The nerve block provides more complete pain relief immediately after surgery. This leads to less need for pain medication immediately after surgery and therefore a decreased risk of nausea (because narcotic pain medication can cause nausea). However, there slight risk with the nerve block. The block is injected into the nerves at the level of the neck. Because of this, the block will temporarily paralyze the entire arm and hand (This is normal!! Please do not be alarmed) and there is a small risk of temporary or even permanent nerve injury. A couple percent of patients will have residual symptoms for a few months after surgery. A permanent injury is very rare (< 1%). The local injection has virtually no risk of nerve injury. Reasons to lean toward the nerve block are if you already take narcotics and thus have high tolerance to medications, get nauseated easily, or have a long trip home after surgery (several hour drive). You should discuss the risk and benefits with the anesthesiologist.

### *Ice*

ICE after surgery is **strongly** encouraged!!! This can be one of the cheapest and most effective ways to limit pain. In fact, studies show regular icing leads to decreased pain weeks after surgery. While you are awake, ice your shoulder for about 20 mins every 1 to 2 hours. Even if you aren’t having a lot of pain, this is a good idea for the first few days after the operation. Options for icing the shoulder include a bag of ice, a bag of peas, or a dedicated ice machine. Many people find that the machine is easiest and most effective to apply and the most comfortable, but may come with an out-of-pocket expense.

In general, you will be given prescriptions for:

- 1) Oxycodone 5mg, 30 pills. 1-2 pills every 4 hours as needed for pain. Narcotics like oxycodone are used for pain but are addictive. Some studies say this can occur within 3 days. Do not take them with alcohol. You should aim to be off this within a few days or by the 2 week visit by the latest. Again, 1/3 of our patients do not require any narcotics after surgery. In the rare case a refill is needed, the number will be taken to 15 at the time of the refill. No more than 1 refill will be provided.



- 2) Neurontin (Gabapentin), 3 pills. 300mg. 1 pill every evening before bed 3 days after surgery. Begin the day AFTER surgery (if surgery is on Monday, take your first dose on Tuesday). This medication is used to reduce “neuropathic pain” but can be sedating which is why I only advise taking at night. This medication is optional, and I recommend avoiding if you have sleep apnea with a CPAP setting >10.
- 3) Zofran, 20 tabs. 4 mg. 1-2 pills every 4-6 hours as needed for nausea.
- 4) \*Tylenol 500mg, over the counter. 2 pills every 8 hours, scheduled. Take this consistently and use the oxycodone for breakthrough pain. That way you can wean off of the oxycodone more quickly. It is important to take the Tylenol and not ignore it as it works together with the oxycodone.
- 5) \*Ibuprofen 600mg, over the counter. three times per day for ONLY 5 days after surgery, beginning the night of surgery.
- 6) \*Docusate Sodium, over the counter. 1tab twice per day while you are taking narcotic pain medication. This is a stool softener to help prevent the constipation that occurs with narcotics. Take this before you develop constipation. In other words, start taking it right away. I recommend beginning to take this 2-3 days before surgery in fact. This medication can be obtained over the counter (does not require a prescription).
- 7) \*Aspirin, over the counter. One 325mg tab daily for 6 weeks postop.  
*\*you must obtain these over the counter PRIOR to surgery*

If you aren't on any narcotic medications prior to surgery, in general you will need these for pain control for about the first few days to 2 weeks at the most. When you no longer need narcotics you can use Tylenol alone. No narcotic prescriptions will be provided 4 weeks after surgery. NO REFILLS WILL BE PROVIDED ON THE WEEKENDS. If you need a refill please anticipate this and let us know early in the week.

If you have a rotator cuff repair, you can take NSAIDs for the first 5 days after surgery, but please avoid NSAIDs from day 5 postop until 6 weeks postop. These include Ibuprofen, Motrin, Naproxen, Mobic, Celebrex, Aleve, etc. These medications have anti-inflammatory properties that may inhibit the same processes that are required for the early phases of rotator cuff healing. Occasional use is okay, but please don't overdo it. If you do not have a rotator cuff repair these medications are okay. After 6 weeks they can be resumed.

## **Nausea**

Preventing nausea is through a combination of limiting the use of narcotics and with medications you are given just prior to surgery through an IV. Most of the time these efforts and the use of Zofran as needed are effective. However, if you are prone to become nauseated OR get seasick/motion sick easily, we should also provide you a prescription for a Scopolamine

patch to put on the evening prior to surgery. Finally, if you have a history of very severe nausea after anesthesia, let us know as there are other medications we can consider.

## **Sleep**

Sleep is one of the most difficult things after shoulder surgery. Expect this to be a bit difficult for the first few weeks, especially because you will be wearing a sling. Some people find it easiest to sleep in a reclining chair while others sleep in their normal bed. A pillow wedge can be useful for sleeping in bed and these can easily be found on Amazon for less than \$50. I don't have a rule other than that you need to keep the sling on until the removal date specified on your rehab plan.

If you are still having difficulty sleeping at the first postoperative visit, we can provide you with a sleeping medication (Ambien) to help. However, my recommendation is to avoid this as much as possible. If you do require Ambien be sure to avoid consuming alcohol with this medication.

## **Driving**

You cannot drive while taking narcotic pain medication. Since studies show that wearing a sling impairs driving, I also recommend that you delay driving until you are out of your sling. This is for 2 to 6 weeks depending on your surgery and rehab protocol.

## **Sling Care**

You will get fit for a sling for protection of your shoulder after surgery. This will occur at your preop visit within 30 days prior to surgery. You *must* bring the sling the day of your surgery.

The sling is one of the biggest annoyances following shoulder surgery but is important for your recovery. In most cases the sling is simply to prevent shoulder movement. Therefore, it is okay to take it off when you are sitting with the arm at your side. You can take the arm out of the sling and place it on a pillow, mimicking the position that it would be in with the sling. When you are up moving around and when you are sleeping the sling **MUST** be on. In the case of a rotator cuff repair the sling also decreases tension on the cuff repair by having the arm away from the body slightly. Therefore, the pillow is important in these cases and when the arm is out of the sling it is better to have the arm slightly away from the body (abducted about 20-30 degrees).

## **After Surgery Clinic Visits**

A typical after surgery course is detailed, although this may be changed in the unlikely event of any unforeseen issues. Also, the timeline is not exact; if you need to change a visit by a week in



the first 3 months or by a couple of weeks after 3 months, this is okay. You will see either me or another member of my team.

Here are the typical return visits to the clinic:

- 1) 2 weeks after surgery: This is a quick visit. We will go over the findings of the surgery. We will also go over rehabilitation again, provide a therapy prescription if needed, handle work notes, and provide any refills of pain medication if needed.
- 2) 3 months after surgery: Rehab will be progressed, usually strengthening begins for rotator cuff repairs (earlier for other procedures).
- 3) 6 months after surgery: Release to recreational activities is the normal and physical therapy is no longer required.
- 4) 12 months after surgery: A final check if not released earlier.

### **Rehabilitation & Return to Activity**

Rehabilitation following shoulder surgery is very important. Your rehab will be tailored to you to match your particular shoulder problem and after surgery you will be provided with a rehab plan with important timelines/dates such as sling removal. Make sure you keep this form.

Formal therapy with a physical therapist does not begin in most cases until you are out of the sling. A prescription for formal physical therapy is usually provided at the first visit after surgery (2 weeks). However, you may do exercises on your own immediately after surgery based on your rehabilitation plan.

Until you are out of the sling, lifting is limited to approximately 2 pounds on the side of the surgery. Return to full activity varies based on the type of shoulder surgery. A typical timeline for full activity after shoulder replacement is 4 to 6 months. While in the sling, aerobic exercise can be obtained with walking or using a stationary bike or treadmill.

A typical golf progression is:

- 1) 3-4 months okay to putt, 2) 4 months for chipping, 3) 6 months for full golf swing.

### **Dressing and Self-Care**

#### *Dressing*

How do I dress myself?

- 1) Pull the shirt up the arm of the surgery side. Pull up to the armpit.
- 2) Roll up the shirt and pull over your head
- 3) Then introduce the opposite arm

Use loose fitting clothing. Front button shirts which make this easier.

### *Bra Wear*

Many women ask if they can wear a bra after surgery. Yes! If the strap of the bra crosses the surgical incision just make sure that portion is covered with a Band-Aid or dressing until full healed (2 weeks). Strapless bras are an option as well. The biggest difficulty is clasping the bra. A front clasp is easiest so one can follow the shirt instructions (pull up the surgical side first, then the opposite side, then clasp in the front).

### *Self-care*

You can brush your teeth if needed with the operative side. Just avoid raising the elbow. In the shower it is often helpful to have a scrub brush for reaching with the opposite arm. For going to the bathroom use the opposite hand to wipe or one can buy a wiping assist handle for reaching behind.

### **Work**

Return to work will be dictated by your type of work and your desire to return. In general, I advise taking 1 to 2 weeks off of work. Light duty with no use of the affected arm is usually allowed at 2 weeks. At 6 to 12 weeks you can return to full duty for light work such as desk work. Heavy labor may be delayed until 4 to 6 months. Work notes can be provided for being completely off work for up to 6 weeks after surgery. After that time, I will write notes for what you are physically capable of doing. These notes will have restrictions which are gradually removed. While your employer may feel that you cannot work based on the restrictions, I cannot legally simply take you completely off work for several months.

### **Biologics and Shoulder Surgery**

More and more patients are asking about biologic options to improve healing after surgery. There is no doubt that improving and modifying biology is the next major frontier in shoulder surgery. The biomechanics (anchors and sutures) of rotator cuff repair have been relatively optimized. But many tears have poor biology (atrophy, short tendon, etc.) and a limited ability to heal. There are currently two biologic options that may be considered to augment healing after shoulder surgery: Platelet Rich Plasma (PRP), and Bone Marrow Aspirate. While both techniques are low-risk, at this time neither technique is covered by insurance because the evidence for these is still accumulating. Nonetheless, for surgery performed at Salina Surgical we are working to offer these options, though it would be additional expense to the patient. I view these technologies as safe and potentially beneficial.

### **Platelet Rich Plasma:**

PRP is obtained from peripheral blood. In this technique 60 ml (4 tbs) of blood is drawn while the patient is asleep during surgery. This blood is then processed in a special centrifuge which separates the blood into different layers. The goal here is to obtain 2-4 ml of PRP. This layer is

specifically chosen because PRP has a high concentrate of growth factors that may aid in healing. Some preparations use only 15 ml (3 teaspoons) of blood. The preparation technique we utilize takes more blood (60 ml) which means that there is a higher concentration of PRP at the end compared to some preparations.

Possible benefits of PRP include decreased pain and improved healing. Overall, the studies now suggest that the use of PRP improves tendon healing. The difference is greater for larger tears since healing decreases as tears enlarge in size. For instance, in one meta-analysis of 11 studies the healing rate for medium to large tears was nearly doubled with the use of PRP.

*The cost for PRP at the Surgery Center is \$XXX (under investigation at this time)*

### **Bone Marrow Aspirate (Stem Cells)**

The concept of bone marrow aspirate (BMAC) is to deliver a higher concentration of growth factors to the repair site compared to PRP. In this procedure 60 ml of blood is obtained from the bone of the pelvis or the shoulder. This is done with a needle through a small stab incision and occurs while the patient is asleep. Similar to PRP, the blood is spun down with a specialized centrifuge. In this case, however, the centrifuge is used to select specific concentrates of cells and the source is from the bone marrow. Again about 2-4 ml is obtained (meaning it is more concentrated than PRP). In a 2014 study performed in Europe the healing rate of rotator cuff repairs augmented with BMAC had a healing rate of 100%, compared to 66% in the standard repair group.

*The cost for BMAC at the Surgery Center is \$XXX (under investigation at this time)*

### **Dental Procedures following Shoulder Surgery**

For years it has been common after orthopaedic surgery, and joint replacement in particular, to delay elective dental procedures for a period of time following the orthopaedic surgery. It has also been a common practice for patients with a joint replacement to take antibiotics prior dental procedures. This has been done with the goal of preventing infection of the joint replacement.

In late 2012, the American Dental Association (ADA) and the American Academy of Orthopaedic Surgeons (AAOS) issued a practice guideline to “consider discontinuing the practice of routinely prescribing prophylactic antibiotics for patients with prosthetic joint implants undergoing dental procedures.” The recommendation was based on a lack of evidence that dental procedures contribute to joint infection or that the risk of joint infection is lowered with antibiotics. At the same time there are problems with giving antibiotics such as promoting drug resistance.

Infection after shoulder procedures is rare. For shoulder arthroscopy the risk is approximately 1 in 5000. For shoulder replacement the risk is 1%, although our personal infection rate is lower. The most common causes of shoulder infection are P. Acnes, which lives in the skin around the shoulder, Staph Aureus, and Staph Epidermis. Given the low risk of shoulder infection, the fact the causative organisms do not frequent the mouth, and given the joint statement above, **my policy at this time is to NOT routinely prescribe antibiotics prior to dental procedures or limit elective dental procedures for a period of time following shoulder surgery.** However, if a dental physician or a patient would like to prescribe an antibiotic prior to a dental procedure I do not object.

### **How can we be reached?**

It is best to call us during the week. Your first line of contact is the office at (785)823-2215 Monday through Thursday, 8am to 5pm and Friday 8am to 12pm. The same number may be called after hours and a partner or member of my team will be available for assistance.

### **After you have recovered**

After you have recovered, I would love if you would submit us a testimonial for us on Facebook, Twitter, or Instagram at the Salina Ortho pages. The joy of my job is seeing people get back in motion. If you are willing, please share a picture with us or send us a video of you doing something you love.