



## **Dr. Denard's After Surgery Instructions & Expectations – Open Shoulder Surgery**

My goal is to help you achieve the best functional result and experience 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 care of the shoulder. You can also expect clear communication and that myself 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!

I ask the majority of my patients to fill out surveys about their shoulder. Although some of the questions can seem silly they are based on validated questionnaires that surgeons use to compare outcomes. It is very important that you fill out these surveys. They let us know how you are doing and how we are doing. They can be completed in clinic or more commonly you will fill out online. You will receive email reminders (from SOS or surgicaloutcomessystem.com) about these surveys. In all cases there is a survey before surgery and several surveys after surgery up until 1 year after surgery. In the case of shoulder replacement surveys will continue then annually until 10 years after surgery.

### **Prior to Surgery**

In most cases surgery is arranged several weeks to months in advance. Because of this most people will have a separate 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), and provide prescriptions for medications after surgery. 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.

The night prior to surgery you should take the following medications:

- 1) Tylenol 1000mg x1

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

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 at the hospital (Rogue Regional Medical Center or Providence Medford) 2.5 hours prior to your scheduled surgery time.

### **Hospital Stay**

The need for staying in the hospital is based on your age, health, and support at home. Most patients under the age of 70 are able to go home the same day. Age over 80 is a risk factor for readmission so I have those patients to stay 1 night in the hospital in most cases. Between the ages of 70 and 80 it is a case-by-case basis, but most patients go home the same day.

If you stay in the hospital myself or a physician assistant (PA) on my team – **Noah Keegan** or **Shane Tracy** - will see you the morning after surgery and you will be allowed to go home. Occasionally a 2<sup>nd</sup> night is needed. You should anticipate the need for help at home for the first few weeks after surgery and make arrangements for a ride home the morning after surgery. If you take an unusual medication or require a CPAP machine for sleeping at night, consider bringing them to the hospital.

### **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. All of 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. In addition, it is advised that you take frequent walks after surgery since immobility is a risk factor for leg clots.

### **Care of Surgical Incisions**

After surgery a bandage will cover your incision. In most cases the incision is closed with an absorbable suture and covered with surgical glue. This bandage can be changed 2-3 days after surgery. You will be sent home with “island” dressings that can be used to re-cover the incision and changed every day or every other day. These can be applied for 3-5 days after surgery, but once the incision is completely dry there is no need to cover it anymore. It is okay to shower without the sling 2 days after surgery. Water can pass over the wound, but please do not soak in a pool or hot tub until 2 weeks after surgery. To wash under your armpit, lean over and dangle the arm at the side. After your shower a new bandage may be applied.

A wound infection after open shoulder surgery is uncommon but can occur. The wound should be dry by 5 days after surgery. If your wound is draining a lot 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. Three 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. Therefore I think it is reasonable to take 500 mg of Vitamin C twice daily for 2 weeks after surgery
- 3) NSAIDs. Non-steroid anti-inflammatories (Ibuprofen, Motrin, Naproxen, Mobic, Celebrex, Aleve, etc) can influence rotator cuff healing based on basic science studies (rat studies). The timing is important. It appears that if given early and continuously they can decrease tendon healing. Therefore, I advise avoiding taking continuous NSAIDs for

6 weeks following surgery. However, I believe that it is reasonable to take NSAIDs for the first 3 days after surgery to limit the need for narcotics.

Interestingly, after the early phase NSAIDs may actually help remodeling. Therefore from 6 weeks to 12 weeks after surgery NSAIDs may actually be advantageous and I advise taking 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.

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

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. 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. 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 degrees 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 simply not a pain free process. I use a multi-modal approach that includes medications prior to surgery and the goal is to limit narcotics as much as possible.

Upon arrival for surgery you will receive medications by mouth that have been shown to reduce post-surgical pain.

You will also receive an injection of a numbing medication (like at the dentist) which will provide good pain control for roughly 12 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 anesthesiologist. 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 is a rebound effect of the block at 24 hours where pain increases after the block wears off. With the local, pain is

higher immediately after surgery but there is much less rebound effect. Additionally, the local injection has virtually no risk of nerve injury. 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. I recommend you do your best to stay on top of the pain in the first few days by taking pain medication as soon as you begin to experience the pain, then taper off the medication as soon as you are able. Many people have their surgery with just the local and do quite well, but the choice is yours. In general, I recommend that if you already take narcotics you should have a block. If you do not take narcotics discuss the risk and benefits with the anesthesiologist.

ICE after surgery is must!!! This is 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 to apply and most comfortable. However, the dedicated machine does have an out-of-pocket expense since it is not covered by insurance. If you are interested in this type of device you can discuss with our bracing/orthotics specialist.

In general, you will be given prescriptions for:

- 1) Oxycodone 5mg. 1-2 pills every 4-6 hours as need for pain. 40 pills will be provided. Narcotics like oxycodone are used for pain but are addictive. Some studies say this can occur within 10 days. You should aim to be off this by the 2 week visit or even within a few days from surgery.
- 2) Neurontin (Gabapentin) 300mg. 3 pills will be provided. 1 pill every evening before bed for 3 days after surgery. Begin the day after surgery (If surgery is on Friday take your first dose on Saturday). This medication is used to reduce "neuropathic pain" by can create somnolence which is why I only advise taking at night. I recommend avoiding if you have sleep apnea with a CPAP setting >10.
- 3) Zofran 4 mg. 1-2 pills every 4-6 hours as needed for nausea. 20 tabs will be provided.
- 4) Senna-S. 2 tabs pills 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.

Also, you should take these medications to reduce pain and limit narcotics:

- 5) Tylenol 500mg. 2 pills every 8 hours. 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. In general, Tylenol is needed for the first 2 weeks after surgery
- 6) Ibuprofen 600mg three times per day for 3 days after 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 two weeks. When you no longer need narcotics you can use Tylenol alone. No narcotic prescriptions will be provided 6 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.

In general, for the first 6 weeks after surgery please avoid NSAIDs such as Ibuprofen, Motrin, Naproxen, Mobic, Celebrex, Aleve, etc. other than the first 3 days. These medications have anti-inflammatory properties that inhibit the same processes that are required for healing. Occasional use is okay, but please don't overdo it. After 6 weeks they can be resumed.

### **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 both me and a physician assistant (PA) on my team – **Noah Keegan** or **Shane Tracy** – depending on the timeframe after surgery.

Here are the typical return visits to the clinic:

- 1) 2 weeks after surgery: You will see me. 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: Visit with PA. Rehab will be progressed, usually strengthening at this phase.
- 3) 6 months after surgery: Visit with me. Release to recreational activities is the normal and physical therapy is no longer required.
- 4) 12 months after surgery: Visit with me.
- 5) 2 Years, 5 years, 7 years, and 10 years after surgery for shoulder replacements.
  - 2 years is considered standard of care
  - 5, 7, and 10 years are patients enrolled in our long-term study

### **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. You will need to do exercises on a daily basis and you may also need work with a physical therapist. You can also have a copy of my rehabilitation programs. These programs are based on the best available studies and designed to maximize your long-term outcome. Please DO NOT let anyone make changes to your rehab without you and I discussing first. In most cases formal physical therapy can begin when you come out of the sling.

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. Running is okay after the sling removal date. While in the sling, aerobic exercise can be obtained with walking or using a stationary bike or treadmill.

**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.

**Sling Care**

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.

**Driving**

You cannot drive while taking narcotic pain medication. Since studies show that wearing a sling impairs driving, I must 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.

**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 2 weeks after surgery. After that time I will write notes for what your 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.

**How can we be reached?**

It is best to call us during the week. **Kasidy**, my nurse, is your first line of contact Monday through Thursday, 8am to 5pm. She is out of the office on Fridays. Her voicemail is **541-608-2595**. She and I communicate daily. After 5pm or on the weekends, call 541-779-6250 and the on-call physician for our group will be paged.



## **Preoperative Checklist for Open Shoulder Surgery**

### **1 month prior:**

- Preoperative visit in clinic within 1 month prior to surgery to obtain after-surgery prescriptions and to get fit for your sling
- Begin taking Vitamin D
- Arrange a ride to and from surgery

### **1 week prior:**

- Stop taking Aspirin, NSAIDs (Ibuprofen, Aleve, Naproxen), and Fish Oil
- Complete your pre-surgery questionnaire in clinic or online (Surgical Outcomes System)
- Consider practice sleeping with you sling and dressing
- Arrange important household items so you don't have to reach up with 2 hands

### **2-3 days prior:**

- Wash shoulder for 3 days with Benzoyl peroxide 5-10%. Obtain at the drugstore
- Start taking a stool softener 1-2 days before surgery to avoid constipation from narcotics

### **Night before surgery:**

- Shower with Hibiclens
- Nothing to eat or drink after midnight
- Take Tylenol 1000mg x1 prior to bed
- Do not take any Lisinopril or other ACE inhibitor

### **Day of Surgery**

- Do not take any Lisinopril or other ACE inhibitor
- For surgery at the Asante Hospital or Providence Hospital arrive 2.5 hours prior to scheduled surgery time
- For surgery at the Surgery Center arrive 1.5-2 hours prior scheduled surgery time

### **After Surgery**

- Resume normal medications
- Remove dressing 2-3 days after surgery, shower, and apply an island dressing
- Wear leg stocking for 2 days
- Do not take NSAIDS for 6 weeks, other than the first 3 days
- Take Vitamin C for 2 weeks
- Take Vitamin D for 12 weeks