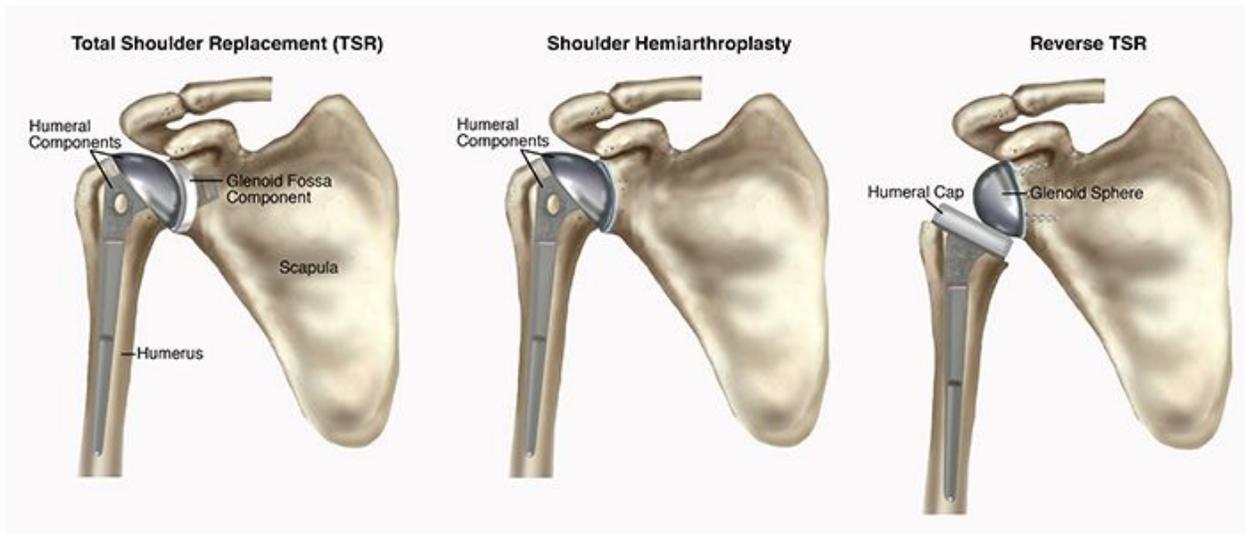


**Patient Guide To**  
**Anatomic Total Shoulder Arthroplasty**  
**&**  
**Reverse Total Shoulder Arthroplasty**



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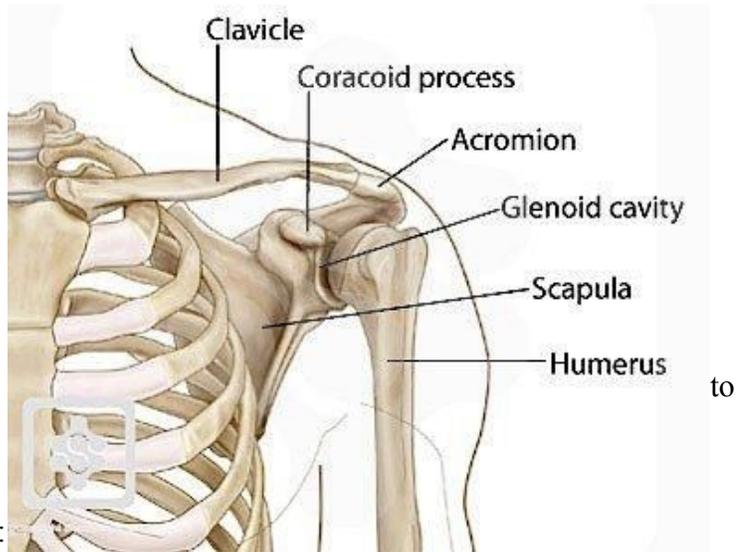
Dr. Tingstad received his undergraduate degree from Washington State University where he graduated as the most outstanding graduating senior in the College of Arts and Sciences. He received his medical degree from the University of Washington, School of Medicine. He graduated with honors as a member of Alpha Omega Alpha. He completed his Orthopaedic surgery residency at Vanderbilt University Medical Center, Department of Orthopaedics and Rehabilitation. Following his residency, he did a one-year Sports Medicine Fellowship at the University of Washington. He began his practice at Inland Orthopaedic Surgery & Sports Medicine Clinic in 2000. He is the team physician for the Department of Intercollegiate Athletics at Washington State University and the University of Idaho. Dr. Tingstad is a board certified fellowship trained orthopaedic surgeon with a subspecialty certification in sports medicine. He is a member of numerous professional societies and is a fellow in the American Academy of Orthopaedic Surgeons. He is a state delegate and member of the American Orthopaedic Society for Sports Medicine. Dr. Tingstad is devoted to excellence; he has enthusiasm for research and teaching and has tremendous compassion for his patients. He is a father of three, and he and his wife Laura are Northwest natives.



Dr. Tingstad and daughter, Abby at Rose Bowl.

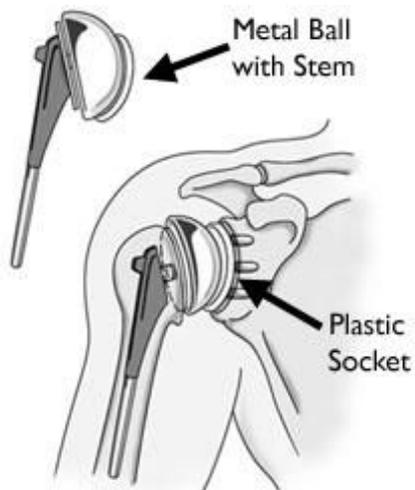
## **What is a Total Shoulder Arthroplasty?**

Total shoulder arthroplasty or “replacement” is the relining or resurfacing of the joint (bone end surfaces) with artificial parts called prostheses. Shoulder replacements began in the 1950s to treat severe fractures and has since been used in other conditions such as osteoarthritis. There are over 50,000 shoulder replacements done each year according to the Agency for Healthcare Research and Quality.



The shoulder is made up of three bones: the humerus, scapula (shoulder blade) and clavicle (collarbone). The shoulder is considered a ball and socket joint in which the ball (head of humerus) translates with the socket of the shoulder called the glenoid. The end of the bones are covered with a smooth substance called articular cartilage that protects the bones and joint. The rest of the remaining surfaces of the shoulder are covered in a synovial membrane, which essentially is responsible for lubricating the cartilage to allow proper range of motion. There are also many muscles, tendons, and ligaments that surround the shoulder to provide support and stability, with one of the most noteworthy being the scapula (shoulder blade) and rotator cuff (muscle that supports the scapula).

## **What is an Anatomic Total Shoulder Arthroplasty?**



An anatomic total shoulder arthroplasty is a replacement that maintains the body’s original anatomy. Typically, patients that experience advanced osteoarthritis or degenerative joint disease while maintaining bone, tendon, and muscle composition are the best candidates for an anatomic total shoulder arthroplasty. There are three components used in the artificial shoulder. The glenoid (socket) component is typically made of polyethylene plastic and may be either cemented or press-fitted into your scapula depending on the quality of your bones at this time. The head of the humerus (ball) component is usually made up of metal alloy and the humeral stem that is implanted into the body of the humerus is comprised of a metal alloy.

## **What is a Reverse Total Shoulder Arthroplasty?**

Reverse total shoulder arthroplasty or “replacement” is similar to an anatomic total shoulder arthroplasty, except the anatomy of the shoulder is reversed, meaning the “ball” component of the socket is implanted into the scapula (glenoid sphere) while the “socket” component is implanted into the humerus (humeral cap). The best candidates for a reverse shoulder are typically similar to anatomic shoulder candidates, except they have additional advanced wear and tear in the ligaments and rotator cuff tendons surrounding the ball and socket joint. The tendons and muscles that comprise the rotator cuff are responsible for holding and moving the ball and socket, and when you



reverse the anatomy of the shoulder, you do not need the normal balance of tendons and muscles to hold the ball and socket in place. The movement in this joint is now controlled by the deltoid muscle, which is essentially the muscle that runs from the top of the shoulder to the bicep. The glenoid sphere (ball) is still comprised of metal alloy, but is now anchored into the scapula using screws and base plate. The humeral cap (socket) is still comprised of polyethylene and anchored into the humerus using a titanium rod implantation. While a reverse shoulder may implement some additional restrictions on candidates post surgery, it is one of the most effective ways to improve pain and stiffness in shoulders that have additional wear and tear on the rotator cuff.

## **What are My Non-Operative Treatment Options?**

There are many non-surgical avenues that are available to you. Including fluoroscopic (x-ray) or ultrasound guided injections which could provide you with temporary pain relief. You could try physical therapy or massage therapy to increase your range of motion and coordination of muscles. There are certain arthritis medications such as Relafen which could provide you with pain relief and decreased inflammation about the shoulder. If you have questions about non-operative treatments you should contact our office to schedule a consultation.

### **What is the process?**

- Make the decision to have surgery
- Schedule the date for your procedure. The clinical assistant, who will help you select a date, is available to answer any questions. To allow adequate time for the necessary preparations, a surgery date is usually set for four to eight weeks after your decision to proceed.
- Make an appointment with your primary care physician for a preoperative medical evaluation two weeks prior to surgery. You must be cleared for surgery. Dr. Tingstad will order some lab work and tests if needed.
- Make an appointment with your dentist for a dental exam to insure that there is no dental work needed before you can have surgery and to insure that there is not infection present in your teeth or gums.
- If you are taking aspirin or certain arthritis medications, inform us. You may need to stop taking these two to four weeks before surgery.
- Arrange for family and/or friends to assist you after you go home from the hospital.

### **The Day of Surgery**

- Walking shoes with rubber soles or tennis shoes. No house slippers
- Pen and pad of paper to write down the questions that you may have
- Personal care items
- Bring along clothing such as short pajamas, exercise shorts, T-shirts, sweatpants, or gowns/robes.

#### **Report to:**

The front desk of the hospital you are scheduled to have the surgery at. The front desk staff will let same day services know that you have arrived. You will then wait in the waiting area and a nurse will come and get you and take you to the preoperative area.

#### **The pre-operative area:**

The nurse will have you change into a hospital gown. An IV will be started in your arm. You will receive fluids and antibiotics prior to your surgery. You may also have an ultrasound guided block to assist with post-op pain management. Your family and friends may wait with you until your nurse takes you to the operating room. Blocks often make only small amounts of anesthesia necessary.

## After Surgery

After surgery, you will be moved to the recovery room, where the nurses will monitor your vital signs and oversee your recovery from anesthesia. When you awaken, you will notice that there may be a drainage tube under the shoulder bandage to drain blood from the shoulder and prevent swelling.

After you spend 1-2 hours in the recovery room, you will be transferred to a patient room, with your family and friends. The nurses will check your vital signs and pain control. If you are uncomfortable or have nausea, medications will be given to help. A therapist will evaluate you and begin therapy, including sitting, standing, walking, and moving your arm.

### **Pain Medication**

Patients should expect notable soreness for about one to two weeks following total shoulder arthroplasty. We want you to be comfortable but also awake and alert enough to do exercise, including breathing exercises to prevent lung congestion and leg exercises to prevent blood clots. If you have an intravenous method for pain control, the intravenous line is usually connected to the IV tubing in your arm. The block usually lasts about 24 hours.

### **Your Shoulder Incision/Wound Care**

Usually, you will have a waterproof dressing that will allow you to shower. You may notice that your shoulder is slightly swollen and that there is some discoloration on your arm (like a bruise). This is from the bleeding that occurs shortly after surgery, this is normal. The discoloration, which may extend to the neck or wrist, will slowly disappear. To close the wound, your surgeon uses dissolving sutures or staples, which are removed at the time of your first postoperative office visit 10-14 days after surgery.

### **Preventing Blood Clots**

Clots can develop in the veins of the arm because surgery stimulates the blood to clot, and the inactivity after surgery permits blood to pool in the veins of the leg. Exercising your arm and leg muscles as soon as you return to your hospital room from surgery is very important to help prevent clots. We encourage people to walk at least 40 minutes daily to avoid clots and pneumonia.

### **Ice/Elevation/Sling**

We encourage the application of ice packs following exercise and at least four times per day for 30 minutes at a time when resting with the arm elevated on pillows. An easy schedule to follow is 10:00am, 2:00pm, 6:00pm, and 9:00pm. This elevation is important. It helps reduce swelling and promotes better circulation. The sling may be off two to four hours a day.

## **Swelling/Bruising**

You are likely to see more swelling and discoloration on the outside portion of the knee. This is expected but can be reduced by lying down with the leg elevated as described above.

## **Supervised Physical Therapy**

Following discharge from the hospital, you will begin continue the therapy program you were taught at the hospital three times daily for three weeks. This will allow you to work with a therapist to maximize your range of motion and strength. This is very important to the success of your shoulder. You will begin physical therapy three to six weeks after surgery per Dr. Tingstad's protocol located on inlandortho.net

## **Showering/Bathing**

Showering is permitted as soon as you are comfortable. You may shower and let the water run over the incision and then pat it dry with a towel, no rubbing. Immersing the shoulder in collected water such as bathtub, hot tub, or swimming pool is not permitted until 72 hours after the staples or sutures have been removed. A dryer layer of gauze may be applied to cover the incision if desired. No ointments, lotions, or oils are to be applied to cover the incision until the staples are removed.

## **Understanding the Risk of Surgery**

As with any surgery, there are certain risks. The following are some of the more common complications of which you need to be aware and things we do to try to prevent them.

### **Infections**

There is always a risk of infection with any surgery. You will receive antibiotics in surgery and one dose after surgery to reduce this risk. The risk of infection after total shoulder replacement is approximately one percent (1/100).

### **Blood Clots**

When you have surgery on the shoulder, circulation is slowed during healing. A blood thinner medication may be prescribed for you, which will help to keep your blood a little thinner than normal to prevent blood clots. We begin the first dose on the evening of surgery. Each day in the hospital, blood will be drawn to check your blood thinning level. Another thing that will help to prevent blood clots is to elevate both feet while sitting to prevent blood pooling in the lower legs and perform ankle-pumping exercises.

## **Pneumonia**

Breathing deeply after surgery and using an incentive spirometer are very important to prevent congestion in the lungs, which can lead to pneumonia. It is very important that you are up and out of bed often.

## **Bladder Infections**

Bladder infections are more common when you have had a catheter. It is very important to drink a lot of fluids to help prevent infection. Most shoulder surgeries do not require a catheter.

## **Numbness around the shoulder**

It is important to know that you will experience some numbness on both sides of your shoulder. This is not a problem; it is very normal. During surgery the nerves around your shoulder are disturbed. You may feel tingling sensations as the nerves are healing. You may always feel some numbness around your incision, but this will not affect the function of your new shoulder. Rarely there can be permanent numbness or weakness as a result of trauma to the nerves.

## **Stiffness**

In the early postoperative periods, all patients with a total shoulder arthroplasty experience pain and stiffness of the shoulder. Pain medication will ease the pain but it is very important that you work to increase your motion daily. You will not damage your shoulder by working to increase motion, despite soreness.

## **Severe Complications**

Again, with any major surgery there is a possibility that any of the above complications, as well as problems with anesthesia, could be severe enough to result in death. If there are any questions or concerns regarding these complications, please feel free to discuss them with your surgeon.

## **Frequently Asked Questions after Total Shoulder Replacement Surgery**

### **How many incisions will I have?**

Most will have a 15cm/7in incision.

### **What is the recovery time?**

Everyone heals from their surgery at a different pace. In most cases, however, you will be in a sling for about six weeks after your surgery and will not be able to lift anything heavier than a soda can during this time. After six weeks you will begin to transition out of the sling and continue with weight restrictions.

### **Why do I have to wear the brace for so long?**

The shoulder prosthesis (new shoulder) relies on healing into bone, and in most studies it takes at least 6 weeks for the attachments to reach 70% tensile strength. The brace/sling takes pressure off the repair, so wearing it is important, but not very comfortable or convenient. Also, the rotator cuff is opened and this requires six to twelve weeks to reattach.

### **How long will I be on pain medications?**

You will likely require some form of pain medication for about two to four weeks; initially you will need a stronger medication (such as narcotic). Most people are able to wean off their strong medication after one week and are able to switch to an over the counter pain medication (such as tylenol or ibuprofen). If you are on Coumadin (warfarin), avoid taking any NSAIDs (e.g. aspirin, ibuprofen, Advil, Motrin, Aleve, Naproxen) without first consulting your internist.

### **Do I need physical therapy?**

Yes! The physical therapist plays a very important role in your recovery. You will see a physical therapist after your operation and throughout your stay at the hospital. You may not start going to therapy for 4-6 weeks. After discharge, you will be referred to an outpatient physical therapist. If you go to a rehabilitation facility, you will receive therapy there. The therapist will help you with range of motion, strengthening, and to reach postoperative goals. Your therapist will keep your surgeon informed of your progress.

### **What exercises should I do?**

You will be instructed by your physical therapist on appropriate exercises and given a list to follow. In general, a stationary bicycle and walking are good exercise options. These exercises should be continued indefinitely, even after your recovery is completed.

### **What are good positions for my shoulder? What positions should I avoid?**

You should spend some time each day working finger, wrist, and elbow range of motion in the first six weeks. This means wiggling the fingers, bending the wrist, and bending and straightening the elbow. After about six weeks you will begin to work towards increased range of motion of the shoulder, but you should avoid range of motion until this to ensure proper healing.

### **Can I use weights?**

Generally, not for the first twelve weeks. However, as everyone's strength varies, consult with your physical therapist before using weight. The important first step in rehabilitation is to regain full range of motion, before regaining full range of motion you should avoid strengthening exercises.

### **I am constipated, What should I do?**

It is very common to have constipation postoperatively. This may be due to a variety of factors, but is especially common when taking a narcotic pain medication. A simple over the counter stool softener (such as colace or milk of magnesia) is the best prevention for the problem. In rare instances, you may require a suppository or an enema.

### **When can I drive?**

You should refrain from driving until you are off all narcotic medications and until you have transitioned out of the sling. This may be at least six weeks after surgery.

### **When can I return to work?**

This depends on your profession. Typically, if your work is primarily sedentary, you may return after approximately one to four weeks. If your work is rigorous, you may require up to two to three months off before you can return to full duty. In some cases, more time may be necessary.

### **When can I travel?**

You may travel as soon as you feel comfortable. It is recommended that you get up and stretch or walk at least once an hour when taking long trips. There is an increased risk of blood clots for the first six weeks after surgery especially with air travel.

### **What activities are permitted following surgery?**

You may return to most activities as tolerated after surgery. However, there are certain restrictions on weight lifting and range of motion depending on what phase of rehabilitation you are. If you have questions about your limitations please feel free to contact our office.

### **What activities should I avoid?**

You should avoid lifting heavy objects overhead as this can stress the new shoulder and cause injury. Most people have a five to ten pound weight restriction for three months.

### **Will my shoulder ever be normal?**

We tell patients their shoulder will typically be better but not new. Unfortunately, some patients continue to note problems. Because we can not yet replace your rotator cuff, which often affects total shoulder arthroplasties, the wearing process can continue. However, for most patients they are quite pleased with overall outcome. You can usually reach your new “normal” in 1-2 years post surgery.

### **Can I have sex?**

Yes, as soon as you are comfortable.

### **Can I drink alcohol?**

If you are on Coumadin, avoid alcohol intake. Otherwise, use in moderation at your own discretion. You should also avoid alcohol if you are taking narcotics or other medications.

### **Do I need antibiotics before dental work?**

Yes. You will need to take an antibiotic 1 hour prior to any dental cleaning or work. Call our office prior to your appointment to notify us and we will call in the antibiotic to your pharmacy. Avoid any dental cleaning or non urgent procedures for twelve weeks postoperatively.

### **I feel depressed, is this normal?**

It is not uncommon to have feelings of depression after your shoulder replacement. This may be due to a variety of factors, such as limited mobility, discomfort, increased dependency on others, and or medication side effects. Feelings of depression will typically fade as you begin to return to your regular activities. If your feelings of depression persist, consult your internist.

### **I have insomnia, is this normal?**

This is a common complaint following shoulder replacement surgery. Non Prescription remedies, such as Benadryl or melatonin may be effective. If this continues to be a problem, medication may be prescribed for you. Walking in the late afternoon for twenty to forty minutes can help better sleeping patterns. Additionally, it may be helpful to avoid TV in the bedroom for better sleep.

### **How long will my total shoulder replacement last?**

This varies from patient to patient. For each year following your shoulder replacement, you have a one percent chance of requiring additional surgery. For example, 10 years postoperatively, there is a 90 percent success rate.

### **When do I need to follow up with Dr. Tingstad?**

Most patient are discharged from the hospital on the same day or next day (sometimes you will follow up with Dr. Tingstad's physician assistant, Jordan.

12-14 days after surgery for staple or stitch removal

6 weeks after surgery for an exam of shoulder motion

3-4 months after surgery for exam and assessment of activities

6 months, 1 year, and annually thereafter for x-ray and examination

**I'm out of pain medication:** Refills for pain medication may be obtained by contacting our office during business hours. Or you may contact your pharmacy and they will fax us a request.

***Please call our office appointment desk to schedule appointments: 509 332-2828***

### **Normal things about your new shoulder**

- Clicking noise with range of motion
- Skin numbness on the incision
- Swelling around the shoulder
- Warmth about the shoulder
- Pins and needles feeling at or near the incision
- Dark or red incision line (this will gradually fade to a lighter color)
- Bumps under the skin along the incision, occasionally, the sutures used to close the wound can be felt

### **Abnormal things about your new shoulder**

**(Call the office immediately if you experience any of these)**

- Increased bruising, if on blood thinners
- Increasing redness, particularly spreading from the incision
- Increased pain and swelling
- Fevers over 101 degrees
- Persistent drainage from your incision.