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Anatomic Total Shoulder Arthroplasty

What is shoulder arthritis?

Arthritis in the shoulder is a common condition where the cartilage in your shoulder wears out – like your engine running out of oil. As the cartilage wears out, the shoulder begins to get stiff, painful, and you lose function. Bone spurs are formed as part of the process around your shoulder. Patients get arthritis for several reasons: long-term wear and tear on the shoulder, inflammatory conditions like rheumatoid arthritis, and previous trauma to the shoulder (like dislocations or breaks).

What is a total shoulder arthroplasty (replacement)?

Like a total hip or knee replacement, a total shoulder arthroplasty replaces your damaged and worn-out shoulder joint with a metal and plastic implant. The goals of this surgery are:

- Relieve pain
- Improve motion and function
- Restore quality of life

What is the difference between an "anatomic" or "reverse" total shoulder arthroplasty?

Your normal shoulder joint is made up of 4 key structures:

- Humeral head bone (the ball of the joint)
- Glenoid bone (the socket of the joint, part of your shoulder blade)
- The 4 rotator cuff muscles and tendons
- Deltoid muscle

In an anatomic total shoulder replacement, I replace the normal anatomy of the shoulder with new metal and plastic pieces. Your humeral head (the ball of the shoulder) is replaced with a metal ball and the glenoid (the socket of the shoulder) is replaced with a plastic liner. Normal shoulder motion with an anatomic total shoulder requires you to have normal functioning rotator cuff tendons, as well as a functioning deltoid muscle.

In a reverse total shoulder replacement, the normal anatomy of your shoulder is "reversed". Your worn-out humeral head (ball) is replaced by a metal stem and plastic liner socket, while the glenoid (socket) is replaced by a metal ball. By reversing the orientation of the ball and socket of your shoulder, we change the way the shoulder moves. A reverse total shoulder replacement does not need all the rotator cuff tendons to be working but does still require a working deltoid muscle.

When do you perform an anatomic total shoulder replacement?

An anatomic total shoulder is the preferred shoulder replacement, if possible, as it closely replaces your body's natural anatomy and more likely to give you a more "normal" feeling shoulder. This operation is ideal for patients with the following conditions:

- Shoulder arthritis with a working and intact rotator cuff tendons

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- Humeral avascular necrosis – an uncommon condition when the blood supply to the ball of your shoulder (humeral head) stops and the bone begins to die

What materials are used in total shoulder replacements?

There are a mixture of materials used in these replacements – like total hip and knee replacements:

- Metal: Cobalt Chrome and Titanium are the two most common metals used
- Plastic: Polyethylene is the plastic liner

If you have a Nickel Allergy and are scheduled to undergo a total shoulder replacement, please notify our team. Cobalt chrome contains nickel in the metal. In these situations, I may use a different implant so there is no risk of causing a reaction if you have a nickel allergy.

Will I have any long-term restrictions?

The goal of a shoulder replacement is to relieve pain and get patients back to doing what they love or need to do in life. After an anatomic or reverse total shoulder arthroplasty, there are **no lifting restrictions**. You may go back to all of your pre-surgery activities: weightlifting, golf, swimming, fishing, hunting, racket sports, etc. I would strongly recommend against powerlifting and Olympic lifts – like cleans, jerks – or any other lifts involving violent, rapid motion with high weight. Your implants are strong, but these activities place significant stress on them and may cause them to fail earlier than anticipated.

How long will my shoulder replacement last?

Shoulder replacement technology has rapidly advanced over the years. These newer implants and materials are stronger, grow into bone better, and wear out significantly slower than older implants. For many patients, your shoulder replacement will last the rest of your life. Recent literature indicates that the survivorship (without need for a revision surgery to component wear or problems) of these implants is roughly 95% at 10 years and 80-85% at 20 years

How long does it take to recover from this surgery?

During an anatomic total shoulder replacement, one of your rotator cuff tendons (subscapularis) has to be cut so that the shoulder can be replaced. At the end of the surgery the cut tendon is repaired. It takes around 3 months for your rotator cuff tendon to heal, but it takes almost 6 months for the tendon to heal back to full strength. There are some lifting and sling restrictions after an anatomic total shoulder replacement so that this tendon is given a chance to heal.

All patients recover at their own pace and many factors affect recovery speed, but in general patients find that they are better by 3 months, significantly improved by 6 months after surgery, and continue to improve up to about 2 years after surgery. Here is a rough timeline for our goals after surgery:

When can I return to work?

The answer depends on what type of work you do and what restrictions your job can maintain (i.e. light duty). I will work with you to find an appropriate time to return to work without compromising the repair that was performed. Here are some general guidelines for returning to work:

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- Office/desk work: you may return to work when you are ready, so long as you can wear a sling at work. This may be at 2 weeks for some patients or later, depending on their pain level.
- Manual labor jobs: if your work typically involves lifting objects then your return to work will be later than others. If your job supports light duty work then you may return to work between 2-6 weeks for light duty involving no lifting (i.e. desk work) or at 3 months if your job can ensure you will be lifting < 5 lbs. If your job does not support light duty options, then I will recommend you not return to work until you have been released for full lifting and strengthening (6 months).

Surgery Information

Length of Stay

For many patients, this is a same-day procedure – meaning once the surgery is done and you have recovered in our recovery unit (PACU) then you will go home. You will need someone available to stay in the facility during the day of your surgery and drive you home afterwards.

For patients who have more medical problems or lack support at home, we may recommend you stay overnight so we can ensure you are medically ready and have the social support to go home.

Anesthesia

You will typically receive two types of anesthesia for this surgery.

- General anesthesia: meaning you are asleep during the procedure
- Nerve Block: the anesthesiologist will place medicine around the nerves that go to your arm. This will cause the arm to feel numb and not move. This block is very helpful for pain control after surgery and will last for about 12-24 hours.

Incisions and Dressings

Your incision will be approximately 8-10cm long. In nearly all patients, your skin will be closed with suture all underneath the skin – no stitches to remove later.

Your shoulder will be covered with two layers of dressings. The top layer will be gauze and adhesive dressing. This adhesive is waterproof, so feel free to shower starting the day after surgery. You may leave this dressing in place until you see me in clinic. If it falls off, peels up, or starts letting water underneath, then you may remove this adhesive dressing. You do not need to replace it with another dressing unless you would like to.

The second layer of dressing is a white, silk strip that is waterproof. You may shower over this dressing if your top layer has come off. Please leave this dressing in place until you see me in clinic. You may see some dark spots on this dressing from dried blood. That is completely normal.

When showering, do not scrub the incision or dressings, just allow soap and water to run over the dressing/incision. Please do not submerge your incision under water for 4 weeks after

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surgery – no swimming pools, hot tubs, or baths. Do not apply any oils, ointments, or lotions to your incision or around your incisions.

Sling

When you wake up from surgery, a sling will be on your arm. This sling is very important to protect the repair on your shoulder. You will be in a sling for a total of 6 weeks – 2 weeks full time and then 4 weeks only while sleeping and out in public spaces. While some surgeons may allow their patients to come out of a sling earlier, I prefer longer protection of the rotator cuff tendon that I have to cut and then repair to do your replacement. The best chance for your tendon to heal is the first time we do this surgery. You may remove the sling for the following circumstances during the first 2 weeks:

- Showering or changing clothes
- If you are relaxing on the couch – arm supported with pillows underneath the elbow
- When you are performing your home exercises or exercises with physical therapy

Is my sling in the correct position?

This is a very common question. The simple answer is if you can look down and see your elbow then your sling is in an appropriate position – whether that means your arm is at your side or arm is across your stomach. The sling is in a bad position if your elbow is behind your back and you cannot see your elbow. Otherwise, the sling is mainly for comfort so you may adjust the position as needed for comfort.

Pain Control

Shoulder replacements can sometimes be uncomfortable or painful early on. Many patients have been dealing with pain for years and after surgery their pain is already significantly better, but all surgeries cause some pain afterwards. The first week or two is typically the worst. The swelling in your shoulder and hand is completely normal and will go away within the first week. Here are some helpful tips for pain control:

- Review my "Post-operative medication" information sheet I provided or on my website. I prescribe many different medications after surgery to help control your pain in different ways.
- Sleep: wear your sling and place a pillow behind your elbow while you sleep. Please sleep on your back. Many patients find sleeping in a reclined position is the most comfortable position – a recliner or propping your back up with pillows may be very helpful.
- Ice: I strongly recommend ice after surgery. This will help with the pain and swelling after surgery. Apply for 20 minutes on and then 20 minutes off, repeat as needed. Ice-packs work just as well as an ice machine – and are significantly cheaper; however, many patients find the ice machine to be less hassle. Amazon and some medical supply stores supply these ice machines.

Post-operative Appointment

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I will see you at roughly the following intervals after surgery: 2 weeks, 6 weeks, 3 months, 6 months, 1 year, 2 years, 5 years, and every 5 years thereafter.

After your surgery, if you do not have a first post-operative visit appointment please call our office so we can schedule to see 2 weeks after surgery.

For any concerns, please contact my office

Please call my office if you begin to experience any of the following after surgery:

- Fever above 101.5 F
- Loss of motion or new onset numbness after surgery (your nerve block will be in place for approximately 24 hours after surgery)
- Excessive bleeding that is saturating the bandages
- Increased pain, increased redness around the incision, purulent drainage (thick, white drainage with a foul odor), or persistent drainage > 4 days.

Post-operative Rehab and Restrictions

Physical Therapy or Home Therapy

Your main goal after surgery is allowing the soft tissues to recover from the procedure by staying in the sling. During the first two weeks after surgery, please do the exercises listed in the document "Phase I – home exercise program". This consists mainly of shoulder pendulum swings, ball squeezes, hand/wrist/elbow motion. You may come out of your sling when you are doing these exercises.

At your 2 week surgery visit, I will give you a physical therapy prescription or a home exercise routine if you would prefer to do your exercises at home without a therapist.

Restrictions after surgery

- Sling:
  - Full-time 2 weeks and then 4 more weeks only when sleeping or in public
- Motion restrictions:
  - No abduction or ER > 30 deg (imagine wall next to your body) for 6 weeks
  - No behind the back internal rotation exercises for 6 weeks
  - Do not push yourself out of a chair or bed with your operative arm until 12 weeks after surgery
- Strengthening and weightlifting:
  - **No strengthening operative arm until 12 weeks after surgery**
  - Weightlifting restrictions: avoid bench press, Olympic lifts, and overhead press until 6 months post-op

Helpful resources during your recovery

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Post-op Button or Magnetic shirts
You can find these shirts on amazon by searching “Post-op shoulder surgery shirts”. They have magnetic or button options that make it very easy to change your shirt without taking your sling off. They are typically ~$15 per shirt.

Ice Machine
While ice packs are cheap and just as effective, many patients like to use ice machines after shoulder surgery as they are less hassle. These machines can be found in medical supply stores but Amazon will sell these for much cheaper (~$100). Search “ice machine for shoulder surgery” to find multiple options.

Door Pulley
A door pulley is a very helpful way to work on range of motion exercises for your shoulder. Using the non-operative arm you can raise your operative arm without any effort (passive) or with some effort from your operative arm (active-assist). You can find these on Amazon by searching "Door Pulley for Shoulder Therapy".

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Resistance Bands

Resistance bands are used in many of my home exercise routines for patients after around 3 months from surgery. You can find these on Amazon by searching "Theraband resistance bands". Keep the band resistance under ~5 pounds.