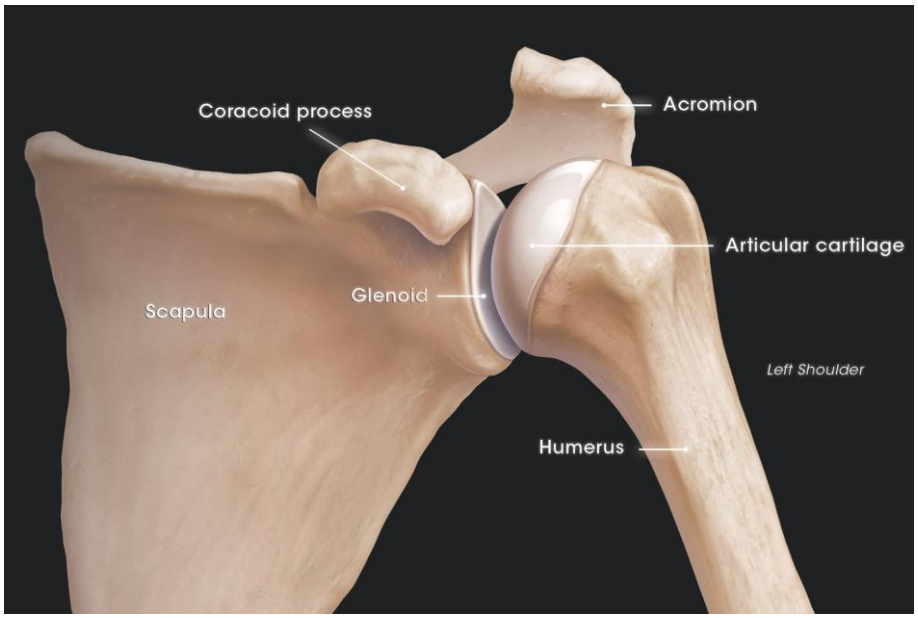
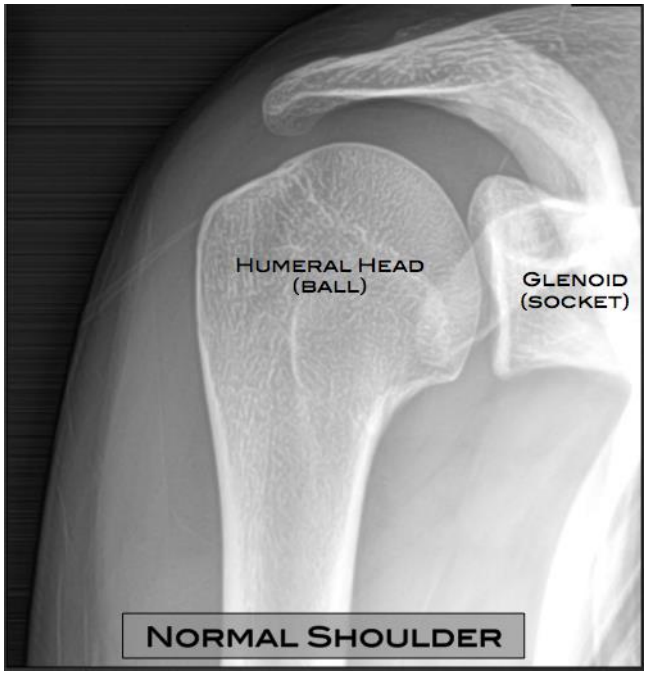
Reverse Total Shoulder Replacement

DESCRIPTION

The normal shoulder is made up of a ball and socket joint. The ball is called *the humeral head* and the socket is called the *glenoid*.

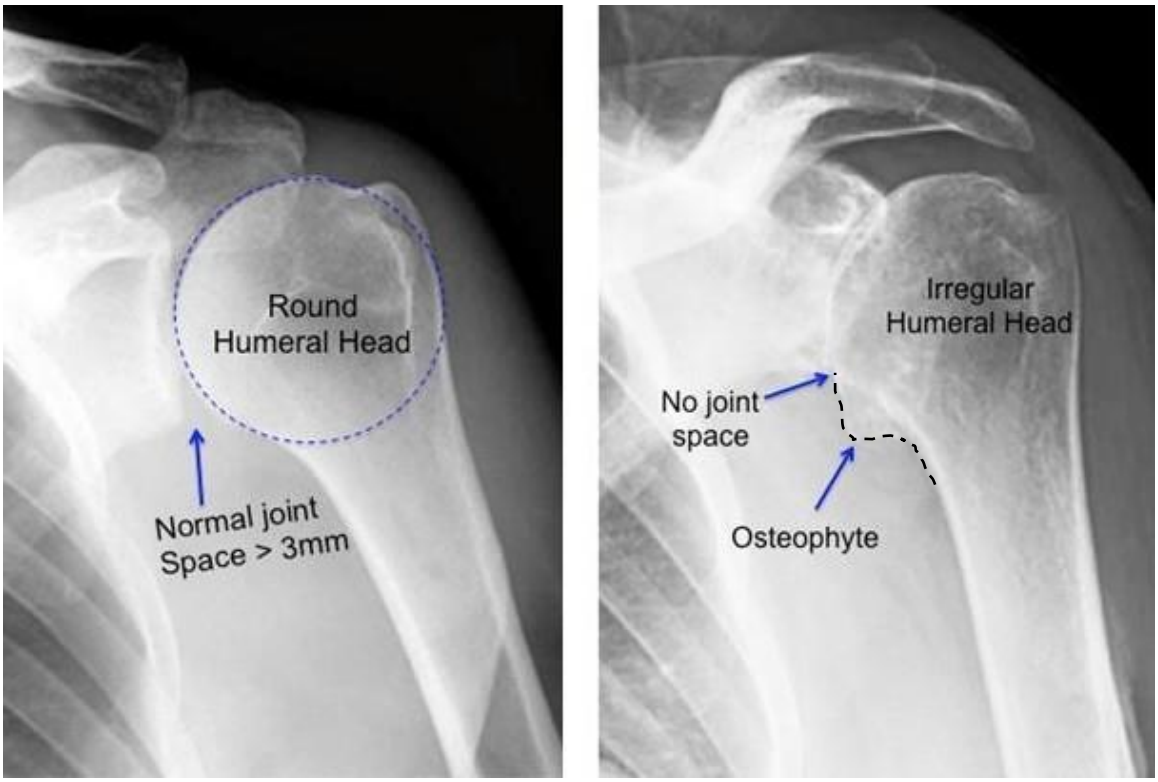


Shoulder anatomy



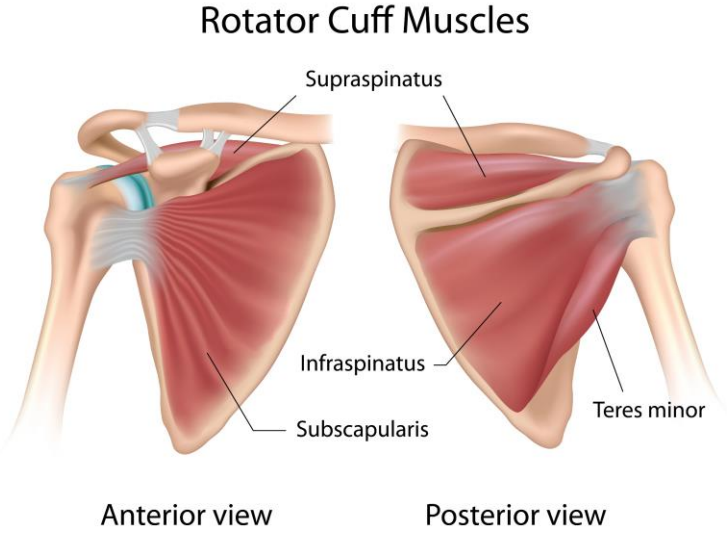
Normal shoulder x-ray

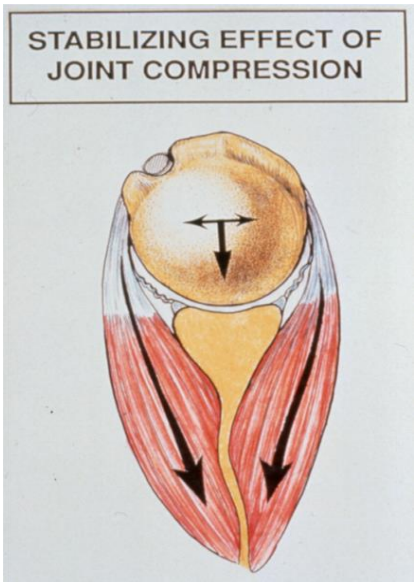
In an arthritic shoulder, the normal cartilage (smooth surface of joint) is worn away, and there is bone-on-bone without the normal smooth gliding surfaces. The joint may also become irregular from boney growth (osteophytes), which is the body's attempt to "heal" the cartilage injury.



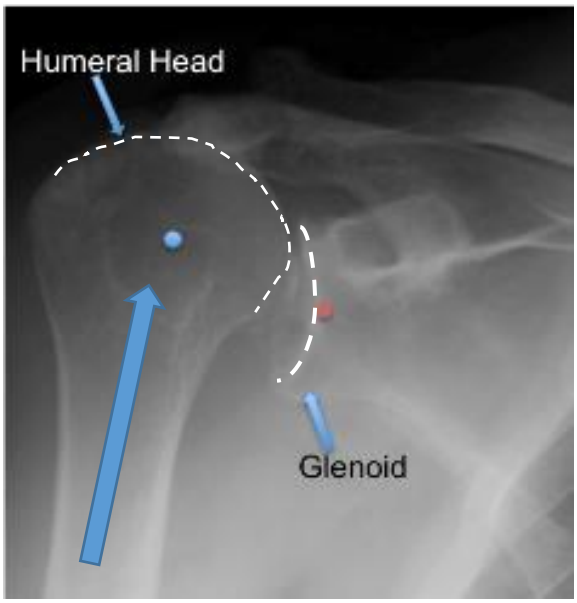
Arthritic shoulder changes (x-ray)

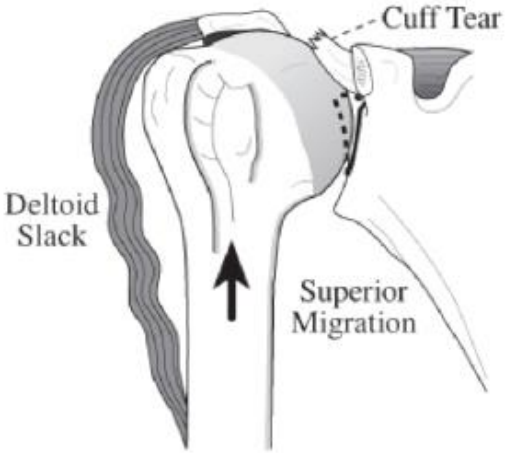
Pain is usually due to the irregular joint surfaces rubbing on one another and from the inflammation of this wear and tear. In the case of certain types of arthritis, there can also be damage to the *rotator cuff tendons*. These are tendons that encircle the humeral head (ball) and help to keep the humeral head in the glenoid (socket) when the arm is elevated. These tendons also help to rotate the humerus on the glenoid so the arm can be raised.

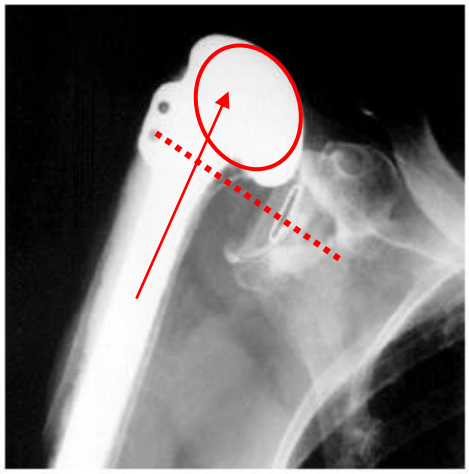




Without normal function of the rotator cuff, the humeral head may move upward out of the glenoid socket, making it difficult or impossible to raise up the arm. If a *total shoulder replacement* is used in this situation, the humeral head usually remains upward out of the socket and elevation of the arm is impossible.

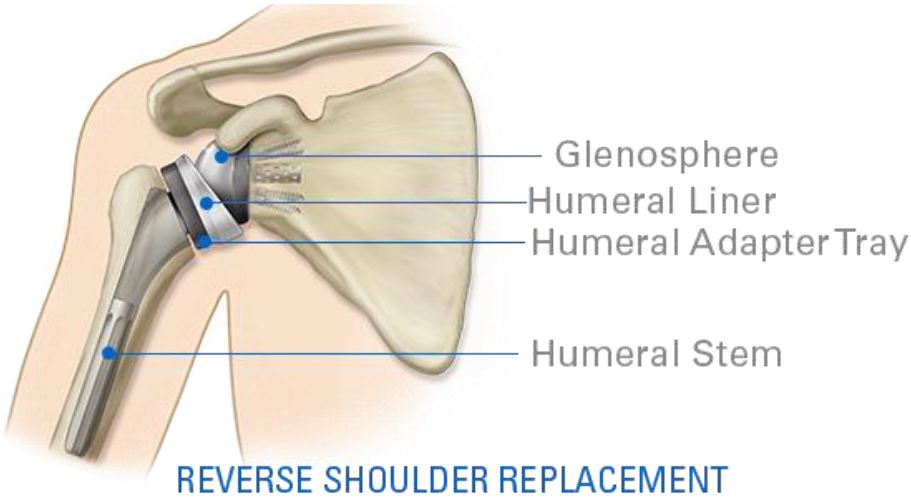






Humeral prosthesis is dislocated upward out of the joint. Patient unable to raise arm.

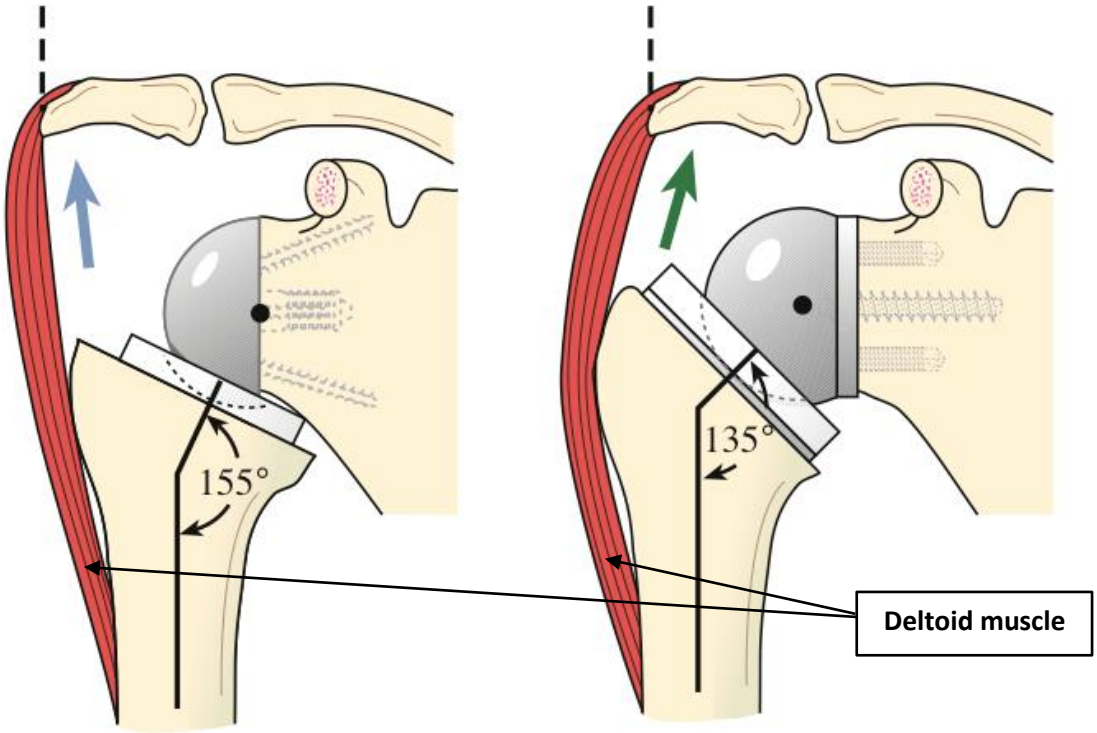
The *reverse total shoulder replacement* changes the orientation of the shoulder so that the normal socket (glenoid) now is replaced with an artificial ball, and the normal ball (humeral head) is replaced with an implant that has a socket into which the artificial ball rests. This type of design completely changes the mechanics of the shoulder and enables the artificial joint to function when the rotator cuff is either absent or when there is significant bone loss.



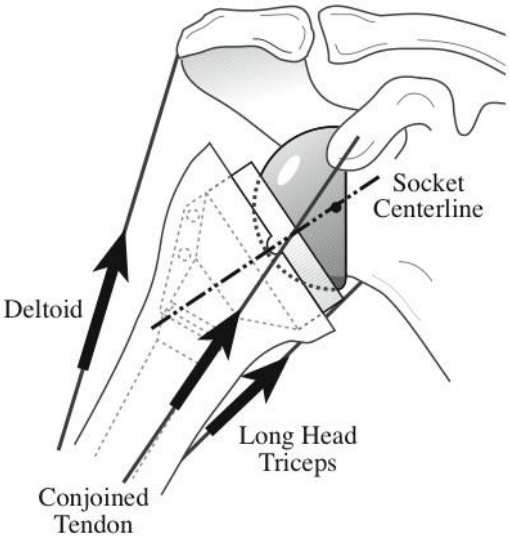
The *reverse total shoulder replacement* is recommended for patients with one or more of the following:

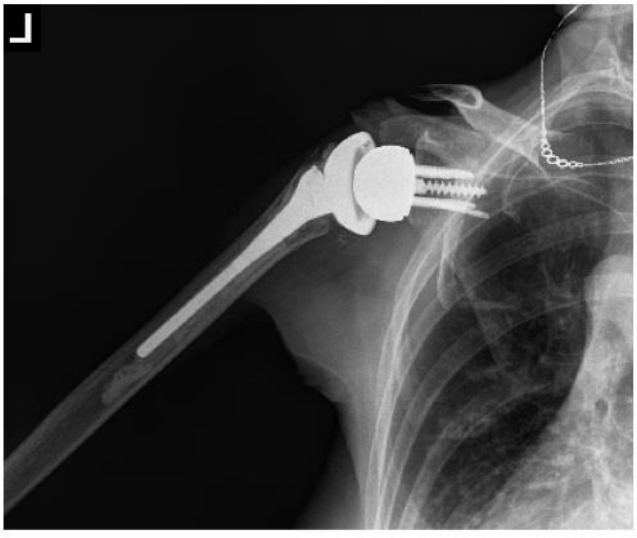
1. Painful rotator cuff tear arthropathy in older patient
2. Failed fracture repair with loss of rotator cuff in older patient
3. Failed prior shoulder replacement surgery

The benefit of the reversal of the shoulder joint is that it allows the deltoid muscle to lift the shoulder instead of the rotator cuff, which cannot lift due to irreparable tear. Reversing the ball and socket changes the mechanics of the shoulder to improve active range of motion and strength. The result is that the patient can raise his (her) arm higher and even sometimes overhead.



Mechanics of reverse shoulder replacement





BEFORE SURGERY

If you and Dr. Gobezie decide you are going to have surgery using a reverse shoulder replacement, several steps are necessary before surgery:

1. You may need some special x-rays, a CT Scan, or an MRI.
2. You may need to have a consultation with an anesthesiologist if you have a history of medical problems (i.e. heart disease, diabetes, asthma).
3. Your primary care physician or any specialist (cardiologist, etc) whose care you may be under should send Dr. Gobezie a summary of your medical conditions and an assessment of your readiness for surgery.
4. In some cases, you may need to obtain an EMG (electromyography) study to determine if the nerves which make the muscles work properly in your shoulder, are indeed functioning normally.

The following are reasons <u>NOT</u> to proceed with surgery:

a. **Active infection**
b. **Nerve injury affecting deltoid function**
c. **Young patient with expectations for heavy use of shoulder**

EXPECTATIONS

Most patients report minimal or no pain after surgery, and most can raise the arm much higher than before surgery. While this surgery is widely successful, some complications have been reported. When this surgery is performed for difficult problems, the complications rate may be higher than standard shoulder replacement.

Potential complications include:

- Infection and/or Instability of the joint replacement
- Fracture of either the humerus or glenoid bone
- Nerve injury

A happy and active 86 years-old female. Six months following a left reverse shoulder replacement. Overhead motion and no pain.

SURGERY DAY

It is important to follow the instructions given to you for the night prior to surgery. You should not have anything to eat or drink after midnight on the night before surgery. Your primary care physician, or the anesthesiologist who you see before surgery, will tell you whether to take your usual medications before surgery.

On the day of surgery, you will arrive at the hospital **two** hours prior to your scheduled surgery to check in and be prepared in the preop area by the anesthesiologist and nursing staff. Visitors are limited to two people, 12 years or older. A staff member will escort all visitors to preop.

After completing the preop process, the patient will be taken to the operating room. During the procedure, the staff can provide updates on the progress of the surgery and estimated time of completion. The surgery usually takes 30 minutes, but in revision surgery, settings may take longer. The time spent in the recovery room (PACU) is usually an additional two to three hours. The PACU is a specialized care area for patients only (no visitation), where you are closely monitored following your procedure. Plese note that it will be about one hour before the nurse will provide any updates from the PACU. However, visitors may inquire anytime about the patient's progress by speaking with the surgical waiting are staff member.

Most reverse replacements are outpatient procedures, allowing the patient to go home the day of surgery.

Based on your discussion with the anesthesiologist prior to surgery, you may also have a nerve block. This is given to you before surgery, and the pain relief, which this gives, may last well into the evening after surgery.

While a blood transfusion is rare, it may occasionally be necessary, so you may discuss donating your own blood in advance of surgery so it can be transfused if you need it after surgery.

When you are discharged from the hospital you will need someone to take you home. This can be a family or a friend. Some patients will need assistance at home, so family should be aware that you will need help with simple daily living chores such as dressing, cooking, and feeding yourself. In some circumstances, it may be necessary to discuss going to a supervised rehabilitation facility for a period after surgery until you can begin actively using your operated arm.

AFTER SURGERY

Ideally, our medical staff will want to see you about 1-7 days after surgery to check the healing of your incision. If you have traveled from a distance, it would be possible to have this visit with a local physician and then see Dr. Gobezie at the 6- to 8-week mark. Several x-rays will be ordered at your follow up visit. You should then follow-up periodically per your needs and Dr. Gobezie's preference.

- Bathing: You may remove gauze pad bandage once you arrive home. You may shower one day after surgery. Do not remove steri-strips; they will be fall off after 2 weeks.
- Sling: Wear the sling for one week for comfort only. Come out daily to move elbow, wrist, and hand. Use your arm to eat, drink, shower, and shave.
- Driving: You are permitted to drive one you are off pain medication and feel comfortable doing so.

It is important to be on the lookout for signs and symptoms of infection following surgery. These include: fever, chills, nausea, vomiting, diarrhea, redness around your incision, yellow/green drainage from your incision. Should you have any of these symptoms, please contact your surgeon's office immediately.

You will need to take prophylactic antibiotics before dental procedures, colonoscopies or other invasive procedures. This consists of Amoxicillin (2 grams) one hour prior to procedure. If you have a penicillin allergy, you should take Clindamycin 600 mg one hour prior to procedure. Your dentist or Dr. Gobezie can prescribe this. You can call the office if you have questions about antibiotic therapy following your surgery.

PHYSICAL THERAPY

You may arm out of the sling for daily living activities, such as eating, drinking, showering, shaving, and dressing. Otherwise, you should stay in the sling for one week and not re-bandage the wound.

After one week in the sling, you may begin therapy. This therapy program is usually divided into phases:

- **Phase I (Duration: 1 week)**: Pendulum exercises, **passive (assisted)** motion performed by you or a therapist. No strengthening or resistance exercises. **Lay on your back**, start with 10 reps in morning, 10 in afternoon, 10 in evening. Increase to 15/15/15 in 4-5 days, then again to 20/20/20 towards end of week.

- **Phase II (Duration: 1 week**): **Lay on your back**, perform same motion in phase I only this time doing it on **your own and without assistance (active)**.

Between 3-4 weeks post-surgery, once you are able to start moving your arm over and back without assistance, **you can start moving your arm up the wall with a washcloth**. Use your other arm for assistance to start.

- **Phase III**: Once you have mastered the wall climb without assistance, you can start using your arm for normal function and activities.

****PLEASE NOTE: Dr. Gobezie does not recommend using bands or weights for the first 3 months after surgery. Using weights can lead to bone fracture in the shoulder. Please avoid use of weights until your doctor give you permission.**