



Major League Care for the Home Teams



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Shoulder Joint Replacement

Although shoulder joint replacement is less common than knee or hip replacement, it is just as successful in relieving joint pain.

Shoulder replacement surgery was first performed in the United States in the 1950s to treat severe shoulder fractures. Over the years, shoulder joint replacement has come to be used for many other painful conditions of the shoulder, such as different forms of arthritis.

Today, about 53,000 people in the U.S. have shoulder replacement surgery each year, according to the Agency for Healthcare Research and Quality. This compares to more than 900,000 Americans a year who have knee and hip replacement surgery.

If nonsurgical treatments like medications and activity changes are no longer helpful for relieving pain, you may want to consider shoulder joint replacement surgery. Joint replacement surgery is a safe and effective procedure to relieve pain and help you resume everyday activities.

Whether you have just begun exploring treatment options or have already decided to have shoulder joint replacement surgery, this article will help you understand more about this valuable procedure.

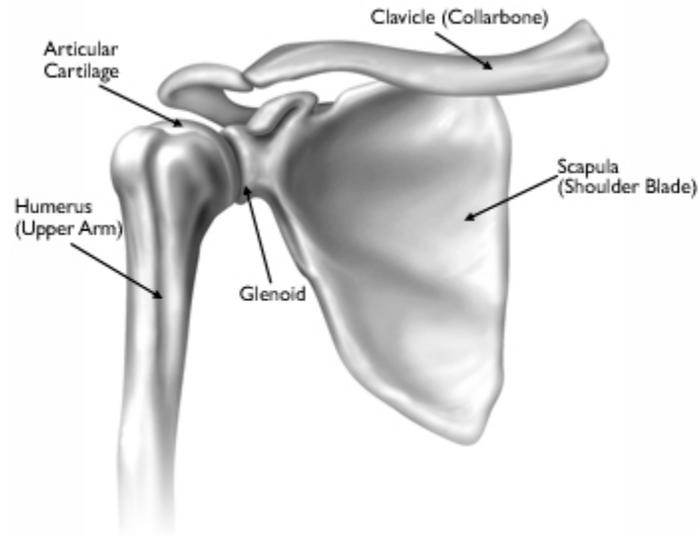
Anatomy

Your shoulder is made up of three bones: your upper arm bone (humerus), your shoulder blade (scapula), and your collarbone (clavicle). The shoulder is a ball-and-socket joint: The ball, or head, of your upper arm bone fits into a shallow socket in your shoulder blade. This socket is called the glenoid.

The surfaces of the bones where they touch are covered with articular cartilage, a smooth substance that protects the bones and enables them to move easily. A thin, smooth tissue called synovial membrane covers all remaining surfaces inside the shoulder joint. In a healthy shoulder, this membrane makes a small amount of fluid that lubricates the cartilage and eliminates almost any friction in your shoulder.

The muscles and tendons that surround the shoulder provide stability and support.

All of these structures allow the shoulder to rotate through a greater range of motion than any other joint in the body.



The bones of a healthy shoulder joint.

Description

In shoulder replacement surgery, the damaged parts of the shoulder are removed and replaced with artificial components, called a prosthesis. The treatment options are either replacement of just the head of the humerus bone (ball), or replacement of both the ball and the socket (glenoid).

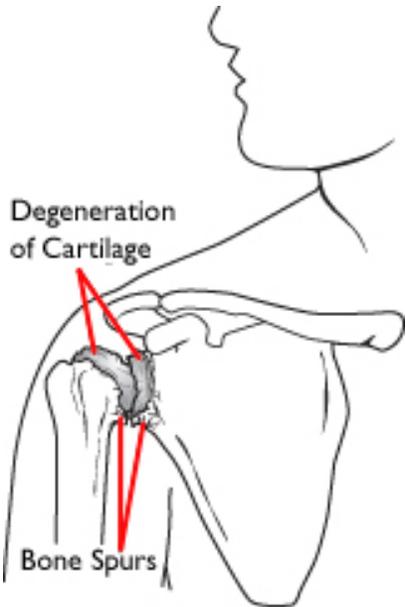
Cause

Several conditions can cause shoulder pain and disability, and lead patients to consider shoulder joint replacement surgery.

Osteoarthritis (Degenerative Joint Disease)

This is an age-related "wear and tear" type of arthritis. It usually occurs in people 50 years of age and older, but may occur in younger people, too. The cartilage that cushions the bones of the shoulder softens and wears away. The bones then rub against one another. Over time, the shoulder joint slowly becomes stiff and painful.

Unfortunately, there is no way to prevent the development of osteoarthritis. It is a common reason people have shoulder replacement surgery.



Osteoarthritis of the shoulder.

Rheumatoid Arthritis

This is a disease in which the synovial membrane that surrounds the joint becomes inflamed and thickened. This chronic inflammation can damage the cartilage and eventually cause cartilage loss, pain, and stiffness. Rheumatoid arthritis is the most common form of a group of disorders termed "inflammatory arthritis."

Post-traumatic Arthritis

This can follow a serious shoulder injury. Fractures of the bones that make up the shoulder or tears of the shoulder tendons or ligaments may damage the articular cartilage over time. This causes shoulder pain and limits shoulder function.

Rotator Cuff Tear Arthropathy

A patient with a very large, long-standing rotator cuff tear may develop cuff tear arthropathy. In this condition, the changes in the shoulder joint due to the rotator cuff tear may lead to arthritis and destruction of the joint cartilage.

Avascular Necrosis (Osteonecrosis)

Avascular necrosis is a painful condition that occurs when the blood supply to the bone is disrupted. Because bone cells die without a blood supply, osteonecrosis can ultimately cause destruction of the shoulder joint and lead to arthritis. Chronic steroid use, deep sea diving, severe fracture of the shoulder, sickle cell disease, and heavy alcohol use are risk factors for avascular necrosis.



Severe Fractures

A severe fracture of the shoulder is another common reason people have shoulder replacements. When the head of the upper arm bone is shattered, it may be very difficult for a doctor to put the pieces of bone back in place. In addition, the blood supply to the bone pieces can be interrupted. In this case, a surgeon may recommend a shoulder replacement. Older patients with osteoporosis are most at risk for severe shoulder fractures.

Failed Previous Shoulder Replacement Surgery

Although uncommon, some shoulder replacements fail, most often because of implant loosening, wear, infection, and dislocation. When this occurs, a second joint replacement surgery — called a revision surgery — may be necessary.

Is Shoulder Joint Replacement for You?

The decision to have shoulder replacement surgery should be a cooperative one between you, your family, your family physician, and your orthopaedic surgeon.

There are several reasons why your doctor may recommend shoulder replacement surgery. People who benefit from surgery often have:

- Severe shoulder pain that interferes with everyday activities, such as reaching into a cabinet, dressing, toileting, and washing.
- Moderate to severe pain while resting. This pain may be severe enough to prevent a good night's sleep.
- Loss of motion and/or weakness in the shoulder.
- Failure to substantially improve with other treatments such as anti-inflammatory medications, cortisone injections, or physical therapy

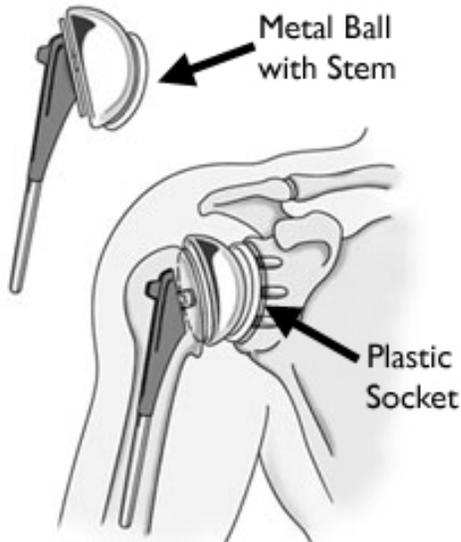
Shoulder Replacement Options

Shoulder replacement surgery is highly technical. It should be performed by a surgical team with experience in this procedure.

There are different types of shoulder replacements. Your surgeon will evaluate your situation carefully before making any decisions. He or she will discuss with you which type of replacement would best meet your health needs. Do not hesitate to ask what type of implant will be used in your situation, and why that choice is right for you.

Total Shoulder Replacement

The typical total shoulder replacement involves replacing the arthritic joint surfaces with a highly polished metal ball attached to a stem, and a plastic socket.



A total shoulder joint replacement.

These components come in various sizes. They may be either cemented or "press fit" into the bone. If the bone is of good quality, your surgeon may choose to use a non-cemented (press-fit) humeral component. If the bone is soft, the humeral component may be implanted with bone cement. In most cases, an all-plastic glenoid (socket) component is implanted with bone cement.

Implantation of a glenoid component is not advised if:

- The glenoid has good cartilage
- The glenoid bone is severely deficient
- The rotator cuff tendons are irreparably torn

Patients with bone-on-bone osteoarthritis and intact rotator cuff tendons are generally good candidates for conventional total shoulder replacement.



These x-rays were taken before and after total shoulder replacement surgery for osteoarthritis.

Stemmed Hemiarthroplasty

Depending on the condition of your shoulder, your surgeon may replace only the ball. This procedure is called a hemiarthroplasty. In a traditional hemiarthroplasty, the head of the humerus is replaced with a metal ball and stem, similar to the component used in a total shoulder replacement. This is called a stemmed hemiarthroplasty.

Some surgeons recommend hemiarthroplasty when the humeral head is severely fractured but the socket is normal. Other indications for a hemiarthroplasty include:

- Arthritis that only involves the head of the humerus with a glenoid that has a healthy and intact cartilage surface
- Shoulders with severely weakened bone in the glenoid
- Some shoulders with severely torn rotator cuff tendons and arthritis

Sometimes, surgeons make the decision between a total shoulder replacement and a hemiarthroplasty in the operating room at the time of the surgery.

Studies show that patients with osteoarthritis get better pain relief from total shoulder arthroplasty than from hemiarthroplasty.

Resurfacing Hemiarthroplasty

Resurfacing hemiarthroplasty involves replacing just the joint surface of the humeral head with a cap-like prosthesis without a stem. With its bone preserving advantage, it offers those with arthritis of the shoulder an alternative to the standard stemmed shoulder replacement.

Resurfacing hemiarthroplasty may be an option for you if:

- The glenoid still has an intact cartilage surface

- There has been no fresh fracture of the humeral neck or head
- There is a desire to preserve humeral bone

For patients who are young or very active, resurfacing hemiarthroplasty avoids the risks of component wear and loosening that may occur with conventional total shoulder replacements in this patient population. Due to its more conservative nature, resurfacing hemiarthroplasty may be easier to convert to total shoulder replacement, if necessary at a later time.



This x-ray shows the cap-like prosthesis used in resurfacing hemiarthroplasty.

Reverse Total Shoulder Replacement

Another type of shoulder replacement is called reverse total shoulder replacement. Reverse total shoulder replacement is used for people who have:



An x-ray of a reverse total shoulder replacement.



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- Completely torn rotator cuffs with severe arm weakness
 - The effects of severe arthritis and rotator cuff tearing (cuff tear arthropathy)
 - Had a previous shoulder replacement that failed

For these individuals, a conventional total shoulder replacement can still leave them with pain. They may also be unable to lift their arm up past a 90-degree angle. Not being unable to lift one's arm away from the side can be severely debilitating.

In reverse total shoulder replacement, the socket and metal ball are switched. That means a metal ball is attached to the shoulder bone and a plastic socket is attached to the upper arm bone. This allows the patient to use the deltoid muscle instead of the torn rotator cuff to lift the arm.