Shoulder Arthritis

Health & Exercise Guide

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Introduction

In 2011, more than 50 million people in the United States reported that they had been diagnosed with some form of arthritis, according to the National Health Interview Survey. Simply defined, arthritis is inflammation of one or more of your joints. In a diseased shoulder, inflammation causes pain and stiffness.

Although there is no cure for arthritis of the shoulder, there are many treatment options available. Using these, most people with arthritis are able to manage pain and stay active.

Anatomy

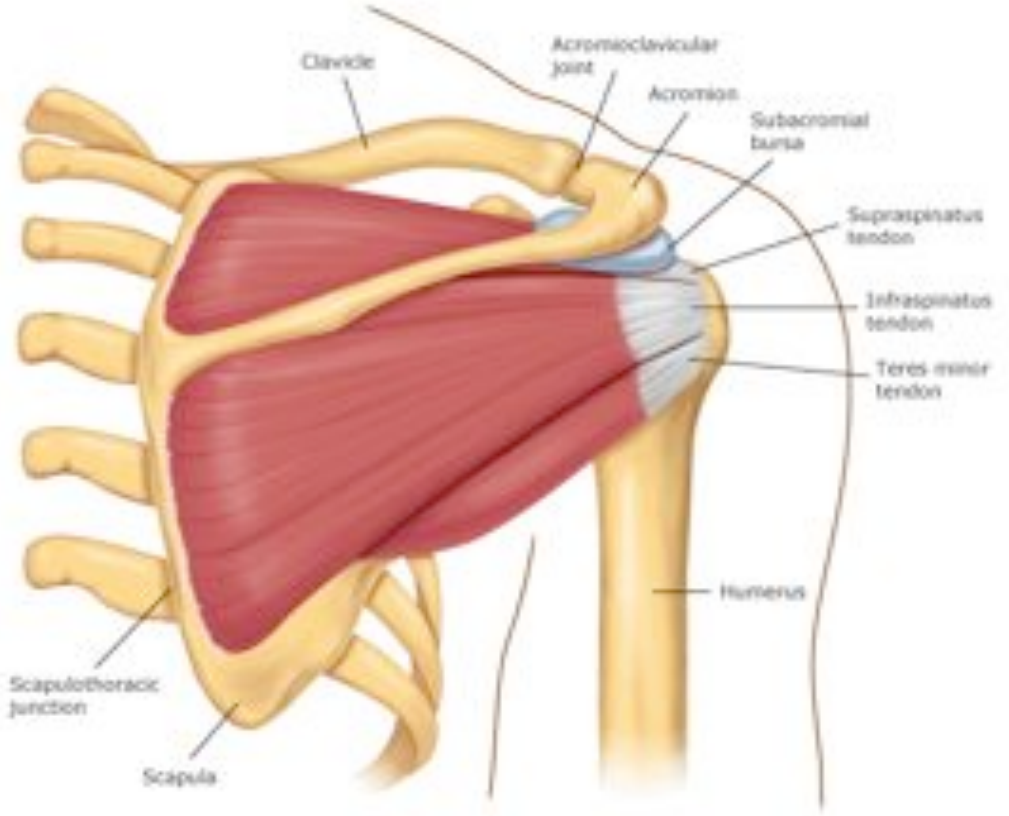
Your shoulder is made up of three bones: your upper arm bone (humerus), your shoulder blade (scapula), and your collarbone (clavicle).

The head of your upper arm bone fits into a rounded socket in your shoulder blade. This socket is called the glenoid. A combination of muscles and tendons keeps your arm bone centered in your shoulder socket. These tissues are called the rotator cuff.

There are two joints in the shoulder, and both may be affected by arthritis. One joint is located where the clavicle meets the tip of the shoulder blade (acromion). This is called the acromioclavicular (AC) joint.

Where the head of the humerus fits into the scapula is called the glenohumeral joint.

To provide you with effective treatment, your physician will need to determine which joint is affected and what type of arthritis you have.



Osteoarthritis

Also known as "wear-and-tear" arthritis, osteoarthritis is a condition that destroys the smooth outer covering (articular cartilage) of bone. As the cartilage wears away, it becomes frayed and rough, and the protective space between the bones decreases. During movement, the bones of the joint rub against each other, causing pain.

Osteoarthritis usually affects people over 50 years of age and is more common in the acromioclavicular joint than in the glenohumeral shoulder joint.

Rheumatoid Arthritis

Rheumatoid arthritis (RA) is a chronic disease that attacks multiple joints throughout the body. It is symmetrical, meaning that it usually affects the same joint on both sides of the body.

The joints of your body are covered with a lining — called synovium — that lubricates the joint and makes it easier to move. Rheumatoid arthritis causes the lining to swell, which causes pain and stiffness in the joint.

Rheumatoid arthritis is an autoimmune disease. This means that the immune system attacks its own tissues. In RA, the defenses that protect the body from infection instead damage normal tissue (such as cartilage and ligaments) and soften bone.

Rheumatoid arthritis is equally common in both joints of the shoulder.

Posttraumatic Arthritis

Posttraumatic arthritis is a form of osteoarthritis that develops after an injury, such as a fracture or dislocation of the shoulder.

Rotator Cuff Tear Arthropathy

Arthritis can also develop after a large, long-standing rotator cuff tendon tear. The torn rotator cuff can no longer hold the head of the humerus in the glenoid socket, and the humerus can move upward and rub against the acromion. This can damage the surfaces of the bones, causing arthritis to develop.

The combination of a large rotator cuff tear and advanced arthritis can lead to severe pain and weakness, and the patient may not be able to lift the arm away from the side.

Avascular Necrosis

Avascular necrosis (AVN) of the shoulder is a painful condition that occurs when the blood supply to the head of the humerus is disrupted. Because bone cells die without a blood supply, AVN can ultimately lead to destruction of the shoulder joint and arthritis.

Avascular necrosis develops in stages. As it progresses, the dead bone gradually collapses, which damages the articular cartilage covering the bone and leads to arthritis. At first, AVN affects only the head of the humerus, but as AVN progresses, the collapsed head of the humerus can damage the glenoid socket.

Causes of AVN include high dose steroid use, heavy alcohol consumption, sickle cell disease, and traumatic injury, such as fractures of the shoulder. In some cases, no cause can be identified; this is referred to as idiopathic AVN.

Pain. The most common symptom of arthritis of the shoulder is pain, which is aggravated by activity and progressively worsens.

If the glenohumeral shoulder joint is affected, the pain is centered in the back of the shoulder and may intensify with changes in the weather. Patients complain of an ache deep in the joint.

The pain of arthritis in the acromioclavicular (AC) joint is focused on the top of the shoulder. This pain can sometimes radiate or travel to the side of the neck.

Someone with rheumatoid arthritis may have pain throughout the shoulder if both the glenohumeral and AC joints are affected.

Limited range of motion. Limited motion is another common symptom. It may become more difficult to lift your arm to comb your hair or reach up to a shelf. You may hear a grinding, clicking, or snapping sound (crepitus) as you move your shoulder.

As the disease progresses, any movement of the shoulder causes pain. Night pain is common and sleeping may be difficult.

Medical History and Physical Examination

After discussing your symptoms and medical history, your doctor will examine your shoulder.

During the physical examination, your doctor will look for:

- Weakness (atrophy) in the muscles
- Tenderness to touch
- Extent of passive (assisted) and active (self-directed) range of motion
- Any signs of injury to the muscles, tendons, and ligaments surrounding the joint
- Signs of previous injuries
- Involvement of other joints (an indication of rheumatoid arthritis)
- Crepitus (a grating sensation inside the joint) with movement
- Pain when pressure is placed on the joint

X-Rays

X-rays are imaging tests that create detailed pictures of dense structures, like bone. They can help distinguish among various forms of arthritis.

X-rays of an arthritic shoulder will show a narrowing of the joint space, changes in the bone, and the formation of bone spurs (osteophytes).

As with other arthritic conditions, initial treatment of arthritis of the shoulder is nonsurgical. Your doctor may recommend the following treatment options:

- Rest or change in activities to avoid provoking pain. You may need to change the way you move your arm to do things.
- Manual Therapy. The Niel-Asher Technique™ is used effectively by many practitioners to help reduce pain and increase range of motion.
- Physical therapy exercises may improve the range of motion in your shoulder.
- Non-steroidal anti-inflammatory medications (NSAIDs), such as aspirin or ibuprofen, may reduce inflammation and pain. These medications can irritate the stomach lining and cause internal bleeding. They should be taken with food. Consult with your doctor before taking over-the-counter NSAIDs if you have a history of ulcers or are taking blood thinning medication.
- Corticosteroid injections in the shoulder can dramatically reduce the inflammation and pain. However, the effect is often temporary.
- Moist heat
- Ice your shoulder for 20 to 30 minutes two or three times a day to reduce inflammation and ease pain.
- If you have rheumatoid arthritis, your doctor may prescribe a disease-modifying drug, such as methotrexate.
- Dietary supplements, such as glucosamine and chondroitin sulfate may help relieve pain. (Note: There is little scientific evidence to support the use of glucosamine and chondroitin sulfate to treat arthritis. In addition, the U.S. Food and Drug Administration does not test dietary supplements. These compounds may cause negative interactions with other medications. Always consult your doctor before taking dietary supplements.)

Your doctor may consider surgery if your pain causes disability and is not relieved with non-surgical options.

Arthroscopy. Cases of mild glenohumeral arthritis may be treated with arthroscopy, During arthroscopy, the surgeon inserts a small camera, called an arthroscope, into the shoulder joint. The camera displays pictures on a television screen, and the surgeon uses these images to guide miniature surgical instruments.

Because the arthroscope and surgical instruments are thin, the surgeon can use very small incisions (cuts), rather than the larger incision needed for standard, open surgery.

During the procedure, your surgeon can debride (clean out) the inside of the joint. Although the procedure provides pain relief, it will not eliminate the arthritis from the joint. If the arthritis progresses, further surgery may be needed in the future.

Resection arthroplasty. The most common surgical procedure used to treat arthritis of the acromioclavicular joint is a resection arthroplasty. Your surgeon may choose to do this arthroscopically.

In this procedure, a small amount of bone from the end of the collarbone is removed, leaving a space that gradually fills in with scar tissue.

Recovery. Surgical treatment of arthritis of the shoulder is generally very effective in reducing pain and restoring motion. Recovery time and rehabilitation plans depend upon the type of surgery performed.

Complications. As with all surgeries, there are some risks and possible complications. Potential problems after shoulder surgery include infection, excessive bleeding, blood clots, and damage to blood vessels or nerves.

Your surgeon will discuss the possible complications with you before your operation.

Shoulder joint replacement (arthroplasty)

Advanced arthritis of the glenohumeral joint can be treated with shoulder replacement surgery, in which the damaged parts of the shoulder are removed and replaced with artificial components, called a prosthesis.

A conventional total shoulder replacement (arthroplasty) mimics the normal anatomy of the shoulder.

In a reverse total shoulder replacement, the plastic cup inserts on the humerus, and the metal ball screws into the shoulder socket.

Replacement surgery options include:

- **Hemiarthroplasty.** Just the head of the humerus is replaced by an artificial component.
- **Total shoulder arthroplasty.** Both the head of the humerus and the glenoid are replaced. A plastic "cup" is fitted into the glenoid, and a metal "ball" is attached to the top of the humerus.
- **Reverse total shoulder arthroplasty.** In a reverse total shoulder replacement, the socket and metal ball are opposite a conventional total shoulder arthroplasty. The metal ball is fixed to the glenoid and the plastic cup is fixed to the upper end of the humerus. A reverse total shoulder replacement works better for people with cuff tear arthropathy because it relies on different muscles — not the rotator cuff — to move the arm.

- Research is being conducted on shoulder arthritis and its treatment.
- In many cases, it is not known why some people develop arthritis and others do not. Research is being done to uncover some of the causes of arthritis of the shoulder.
- Joint lubricants, which are currently being used for treatment of knee arthritis, are being studied in the shoulder.
- New medications to treat rheumatoid arthritis are being investigated.
- Much research is being done on shoulder joint replacement surgery, including the development of different joint prosthesis designs.
- The use of biologic materials to resurface an arthritic shoulder is also being studied. Biologic materials are tissue grafts that promote growth of new tissue in the body and foster healing.

Shoulder Exercises - Before you begin

If you experience shoulder pain, your first inclination will probably be to keep your shoulder still. It is often the case that if you don't move your shoulder, it won't hurt. Of course, there are many reasons why your doctor would want you to rest your shoulder, and he or she will tell you when that is appropriate. However, for most causes of shoulder pain, immobility is the enemy because it can begin a vicious cycle. That is to say, the less you move your arm, the harder it becomes to move it.

So what is the best type of movement or exercise for your shoulders? There are three main types of exercise: range-of-motion or stretching exercises, strengthening exercises, and endurance or aerobic exercises. All three should be part of a program to keep shoulders strong and flexible.

Before you begin an exercise program for your shoulder, it is a good idea to check with your doctor. Your doctor may want to give you tests to make sure you don't have any serious underlying problems. He or she may also want to refer you to a physical therapist or exercise physiologist, who can help you get started with a program of exercise. Once your doctor has examined your shoulder and told you that there is nothing to prevent you from exercising, it is time to get started.

Range-of-motion (stretching) exercises. Range-of-motion or stretching exercises are designed to take your shoulders through their maximum range of movement. These exercises can help you maintain your shoulders' current mobility and, when done consistently, increase their mobility over time. Range-of-motion exercises can be done lying down, sitting, or standing. Unlike some strengthening exercises, range-of-motion exercises can and should be done every day. At first you may feel very stiff and sore after doing them. If the feeling doesn't go beyond soreness, then you may only have to move more slowly or do fewer repetitions until your shoulders get used to the exercises — the soreness should decrease after a while. However, if you feel more pain after exercising than when you started, or if the pain persists for longer than two hours after you are finished exercising, you should see a doctor.

Strengthening exercises. Strengthening exercises can help the muscles in your shoulder better support the joint and decrease the wear that can come from overuse. The stronger your muscles are, the easier it is for them to do their job. As the muscles grow stronger over time, you may notice that you have less pain. These exercises can be done as often as every other day. It's a good idea to aim for three strengthening sessions a week, with at least one day between each session.

Aerobic exercise. Endurance training, or aerobic conditioning, is important for heart health, and a healthy heart is better able to circulate the blood in the body and get necessary nutrients to your joints. Examples of aerobic exercise include walking, swimming, exercise classes, and bicycling. The American College of Sports Medicine recommends 30 minutes of aerobic exercise on five days a week. The 30 minutes does not have to be done all at once. For example, you can break it down into three separate 10-minute sessions.

No matter what, it is important to remember that your ability to use your arms to do everyday tasks depends on healthy shoulders. It only takes a little shoulder pain to make us realize how much we take these joints for granted. Not moving our shoulders because they hurt will only make them more difficult to use. Exercise can help improve the function of your shoulders and lead to less pain, and even small amounts of pain relief can make a huge difference in your quality of life. Don't forget your shoulders in your everyday exercise routine.

Capsule Stretching

Bend forward at the waist

Let the affected arm drop towards the floor (you can also add a small weight)

Feel the sense of tugging and traction in the shoulder joint

You can support your other hand on a chair
Move your body to make the hanging arm swing gently

Use this method to **swing or rock** the arm in small to medium-sized clockwise circles

Repeat anti-clockwise

External Rotation

1. Stand upright, elbows tucked in to your sides
2. Have arms at ninety degrees, straight in front of you
3. Turn your hands with **palms upwards**
4. Hold the exercise band between your hands
5. In this position, keeping your elbows next to your body, separate your hands. This will tense up the exercise band, thus strengthen the shoulder muscles
6. Adjust the exercise band to get the right resistance
7. Do this 10-15 times rest and repeat 3-4 times **daily**

Straight arm extensions

This is another great exercise for strengthening the back of the shoulder.

1. Make a handle by tying a knot on the exercise band
2. Tie the exercise band to a door handle
3. Stand facing the point where you fixed the exercise band, holding the handle
4. Arm straight
5. Keeping the arm straight pull straight backwards
6. Adjust the exercise band to get the right resistance
7. Do this 10-15 times, at a slow even pace, rest and repeat 3-4 times **daily**

Straight arm abduction

1. Make a handle by tying a knot on the exercise band
2. Tie the exercise band to a door handle
3. Hold the handle with the affected arm
4. Stand with your better shoulder towards the door handle
5. Holding the arm straight
6. Bringing arm straight out to the side, keeping the arm straight
7. Adjust the exercise band to get the right resistance
8. Do this 10-15 times rest and repeat 3-4 times **daily**

Towel Pulling

This exercise is great for improving the range of motion. You may **have difficulty** to reach up behind your back, but never the less, this exercise is highly recommended when you are able.

1. Using a large bath towel roll it into a long sausage shape
2. Throw the towel over your affected shoulder using the good arm
3. Hold one end of the towel with the one hand
4. With the other hand pull the towel down until you feel a stretch in the shoulder

Front of shoulder stretch

This is a brilliant stretch using the fit ball. This exercise stretches out the front of the shoulder. The stretch is also so comfortable that it may be held for a long time, it allows you to really work into the stiff areas of your shoulder. This is how it is done:

1. Sit your knees on a matt or a pillow
2. Hands onto the ball
3. Then roll the ball forward **until you feel a stretch** in the front of your shoulder
4. Keep your head down.
5. Maintain that posture for up to a minute
6. Rest and repeat 3-4 times

Arms over head

1. Lying on your back on to the ball, the ball between the shoulder blades, head supported by the ball, squeeze the buttock muscles to keep the spine in a neutral position

2. Bringing straight arms over the head until you feel a stretch in the shoulder

3. The other arm can be used as a weight by putting it onto the arm

4. Maintain that stretch, trying to relax into the stretch. A good way to achieve this is to **use the breathing** to stretch the arm further

5. Maintain the stretch for up to a minute. Rest and repeat 2-3 times

6. **This should stretch not hurt!** Start gently and increase the stretch slowly. Use of a light weight (as shown) is optional.

Stretching the front of the shoulder

1. Lie with your back on to the ball, the ball between the shoulder blades, head supported by the ball, squeeze the buttock muscles to keep the **spine** in a neutral position
2. Bring the arm of the affected shoulder diagonally out from the body until you feel a stretch in the front of the shoulder
3. Maintain that stretch; try to relax into the stretch. A good way to achieve this is to use the breathing rhythm to stretch the arm further
4. Maintain the stretch for up to a minute
5. **Rest** and repeat 2-3 times
6. **This should stretch not hurt!** Start gently and increase the stretch slowly

Shrugging

This can be performed up to five times daily for 2 – 5 minutes. You can move both shoulders at the same time and then independently. Raise the shoulder up to the neck and push them downwards towards the floor. Be careful if you have a neck problem. You can then gently rotate the shoulders in circles together

then independently, again, **take it nice and slow if you have any neck problems.**

- Stand upright
- Shrug your shoulders upwards as high as you can for 8 seconds
- Let the shoulders drop
- Squeeze the shoulders downwards
- Repeat 3 times

The “Elephant”

This exercise stretches the back of the shoulder

1. Stand upright
2. Bring the affected shoulder forward and inwards
3. Use the other arm to bring the affected arm further over, like this you are creating a stretch in the back of the shoulder
4. Maintain a nice even stretch, **this should stretch not hurt**
5. Hold that position for up to 30 seconds
6. Relax and repeat

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