Your shoulder is the most flexible joint in your body. It allows you to place and rotate your arm in many positions in front, above, to the side, and behind your body. This flexibility also makes your shoulder susceptible to instability and injury.

This brochure will help you understand how your shoulder works, the common causes of shoulder problems, the available treatment options, and exercises and activities to enable you to regain pain-free use of your shoulder.

Depending on the nature of the problem, conservative nonoperative methods of treatment often are recommended before surgery. However, in some instances, delaying the surgical repair of a shoulder can increase the likelihood that the problem will be more difficult to treat later.

Early, correct diagnosis and treatment of shoulder problems can make a significant difference in the long run.
How the normal shoulder works

The shoulder is a ball-and-socket joint. It is made up of three bones: the upper arm bone (humerus), shoulder blade (scapula), and collarbone (clavicle).

The ball at the top end of the arm bone fits into the small socket (glenoid) of the shoulder blade to form the shoulder joint (glenohumeral joint). The socket of the glenoid is surrounded by a soft-tissue rim (labrum). A smooth, durable surface (articular cartilage) on the head of the arm bone, and a thin inner lining (synovium) of the joint allows the smooth motion of the shoulder joint.

The upper part of the shoulder blade (acromion) projects over the shoulder joint. One end of the collarbone is joined with the shoulder blade by the acromioclavicular (AC) joint; the other end of the collarbone is joined with the breastbone (sternum) by the sternoclavicular joint.
The joint capsule is a thin sheet of fibers that surrounds the shoulder joint. The capsule allows a wide range of motion, yet provides stability. The rotator cuff is a group of muscles and tendons that attach your upper arm to your shoulder blade.

The rotator cuff covers the shoulder joint and joint capsule. The muscles attached to the rotator cuff enable you to lift your arm, reach overhead, and take part in activities such as throwing or swimming. A sac-like membrane (bursa) between the rotator cuff and the shoulder blade cushions and helps lubricate the motion between these two structures.

**Shoulder problems and treatments**

**Bursitis or tendonitis.** This can occur with overuse from repetitive activities such as swimming, painting, or weight lifting. These activities cause rubbing or squeezing (impingement) of the rotator cuff under the acromion and in the acromioclavicular joint. Initially, these problems are treated by modifying the activity which causes the symptoms of pain and with a rehabilitation program for the shoulder.
Impingement and partial rotator cuff tears. Partial thickness rotator cuff tears can be associated with chronic inflammation and the development of spurs on the underside of the acromion or the AC joint. The conservative, nonoperative treatment is modification of activity, light exercise, and occasionally, a cortisone injection. Nonoperative treatment is successful in the majority of cases, but if it is not successful, surgery often is needed to remove the spurs on the underside of the acromion and to repair the rotator cuff.

Full thickness rotator cuff tears. These injuries are most often the result of impingement, partial thickness rotator cuff tears, heavy lifting, or falls. Nonoperative treatment with modification of activity is successful in the majority of cases.

If you continue to have pain, surgery may be needed. Arthroscopic techniques allow shaving of spurs, evaluation of the rotator cuff, and repair of some tears. Both techniques require extensive rehabilitation to restore the function of the shoulder.
**Instability.** This occurs when the head of the upper arm bone is forced out of the shoulder socket. This can happen as a result of sudden injury or from overuse of the shoulder ligaments.

The two basic forms of shoulder instability are subluxations and dislocations. A *subluxation* is a partial or incomplete dislocation. If your shoulder is partially out of the shoulder socket, it eventually may dislocate. Even a minor injury may push the arm bone out of its socket.

A *dislocation* is when the head of the arm bone slips out of the shoulder socket. Some patients have chronic instability—shoulder dislocations occur repeatedly.

Patients with repeat dislocation usually require surgery. Open surgical repair may require a short stay in the hospital. Arthroscopic surgical repair is often done on an outpatient basis. Following either procedure, extensive rehabilitation, often including physical therapy, is necessary for healing.
**Fractured collarbone and AC joint separation.**
These are common injuries of children and others who fall on the side of their shoulder when playing. Most of these injuries are treated nonoperatively with slings or splints. Severe displaced fractures or AC joint separation may require surgical repair.

**Fractured head of the arm bone.** This is a common result of falls on an outstretched arm, particularly by older people with osteoporosis. If fragmented or displaced, it may require open surgical repair and possibly replacement with an artificial joint (prosthesis).
Osteoarthritis and rheumatoid arthritis. These conditions can cause destruction of the shoulder joint and surrounding tissue, as well as degeneration and tearing of the capsule or the rotator cuff. Osteoarthritis occurs when the articular surface of the joint wears thin. Rheumatoid arthritis is associated with chronic inflammation of the synovium lining. This can produce chemicals that eventually destroy the inner lining of the joint, including the articular surface.

Shoulder replacement. This is recommended for patients with painful shoulders and limited motion. The treatment options are either replacement of the head of the bone or replacement of the entire socket. Your orthopaedic surgeon will discuss with you the best option.
The orthopaedic evaluation of your shoulder consists of three components:

- **A medical history.** Your doctor will gather information about current complaints; duration of symptoms, pain and limitations; injuries; and past treatment with medications or surgery.

- **A physical examination.** This will assess swelling, tenderness, range of motion, strength or weakness, instability, and/or deformity of the shoulder.

- **Diagnostic tests.** X-rays may be taken with the shoulder in various positions. A magnetic resonance imaging (MRI) scan may be helpful in assessing soft tissues in the shoulder. A computed tomography (CT) scan may be used to evaluate the bony parts of your shoulder.
Preparing for surgery

Your orthopaedic surgeon will review the results of your evaluation with you and discuss the best treatment. You and your doctor may agree that surgery is the best treatment option. He or she will explain the potential risks and complications that may occur. Your doctor may discuss donating your own blood to be used if needed during surgery.

Some surgical procedures require you to be hospitalized for a number of days. Your doctor may discuss planning for the period after surgery. You may need to either stay in an extended care facility or have someone help you when you return home.

**Preparation for surgery**

**Things to know as you prepare for surgery:**

- No food or drink after midnight before surgery.
- Discuss with your doctor what to do about medications taken in the morning.
- An hour before surgery, you will be assessed in the preoperative area by a nurse anesthetist or anesthesiologist.
- A general anesthetic will be given so that you sleep throughout the entire procedure, or you will remain awake after receiving an injection which prevents you from feeling pain.
Types of surgical procedures

You may be given the option to have an arthroscopic procedure or an open surgical procedure.

**Arthroscopy.** In this procedure, the orthopaedic surgeon inserts a pencil-thin device with a small lens and lighting system into tiny incisions to look inside the joint. The images inside the joint are relayed to a TV monitor, allowing the doctor to make a diagnosis. Other surgical instruments can be inserted to make repairs, based on what is visualized and diagnosed with the arthroscope. Arthroscopy often can be done on an outpatient basis.

**Open surgery.** This may be necessary and, in some cases, associated with better results than arthroscopy. Open surgery often can be done through small incisions of just a few inches.

Recovery and rehabilitation is related to the type of surgery performed inside the shoulder, rather than whether there was an arthroscopic or open surgical procedure.
Possible complications after surgery

There are always some risks with any surgery, even arthroscopic procedures. These include possible infection and damage to surrounding nerves and blood vessels. However, modern surgical techniques and close monitoring have significantly minimized the occurrence of these problems.

After surgery, some pain, tenderness, and stiffness is normal. You should be alert for certain signs and symptoms that may suggest the development of complications.

Be sure to call your doctor if you develop any of these symptoms after surgery:

- Fever after the second day following surgery
- Increasing pain or swelling
- Redness, warmth, or tenderness which may suggest a wound infection
- Unusual bleeding (some surgical wound drainage is normal and, in fact, desirable)
- Numbness or tingling of the arm or hand

Prevention of future problems

It's important that you continue a shoulder exercise program with daily stretching and strengthening. In general, patients who faithfully comply with the therapies and exercises prescribed by their orthopaedic surgeon and physical therapist will have the best medical outcomes after surgery.
Your orthopaedic surgeon is a medical specialist with extensive education and experience in the diagnosis and nonsurgical and surgical treatment of the musculoskeletal system, including bones, joints, ligaments, tendons, muscles, and nerves.

This brochure has been prepared by the American Academy of Orthopaedic Surgeons and is intended to contain current information on the subject from recognized authorities. However, it does not represent official policy of the Academy and its text should not be construed as excluding other acceptable viewpoints.

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Regular exercises to restore your normal shoulder motion and flexibility, and a gradual return to everyday work and recreational activities are important for your full recovery. Your orthopaedic surgeon and physical therapist may recommend that you exercise from 10 to 15 minutes, two or three times a day during your early recovery period. The following guide can help you better understand your exercise and activity program.

**Pendulum, Circular**
Bend forward 90 degrees at the waist, using a table for support. Rock body in a circular pattern to move arm clockwise 10 times, then counterclockwise 10 times. Do 3 sessions a day.

**Shoulder Flexion (Assistive)**
Clasp hands together and lift arms above head. Can be done lying down (drawing A) or sitting (drawing B). Keep elbows as straight as possible. Repeat 10 to 20 times. Do 3 sessions a day.

**Supported Shoulder Rotation**
Keep elbow in place and shoulder blades down and together. Slide forearm back and forth. Repeat 10 times. Do 3 sessions a day.

**Shoulder Flexion (Active)**
Raise arm to point to ceiling, keeping elbows straight. Hold 10 seconds. Repeat 3 times. Do 3 sessions a day.

**Shoulder Internal Rotation (Active)**
Raise arm out to side, elbow straight and palm downward. Do not shrug shoulder or tilt trunk. Hold 10 seconds. Repeat 3 times. Do 3 sessions a day.

**Shoulder Internal Rotation (Active)**
Bring hand behind back and across to opposite side. Repeat 10 times. Do 3 sessions a day.

**Walk up Exercise (Active)**
With elbow straight, use fingers to “crawl” up wall or door frame as far as possible. Hold 10 seconds. Repeat 3 times. Do 3 sessions a day.
Shoulder Extension (Isometric)
Stand with your back against the wall and your arms straight at your sides. Keeping your elbows straight, push your arms back into the wall. Hold for 5 seconds, then relax. Repeat 10 times.

Shoulder Internal Rotation (Isometric)
Stand at a corner of a wall or in a door frame. Place the involved arm against the wall around the corner, bending your elbow 90 degrees. Push your arm into the wall. Hold for 5 seconds, then relax. Repeat 10 times.

Supported Shoulder Rotation
Stand with the involved side of your body against a wall. Bend your elbow 90 degrees. Push your arm into the wall. Hold for 5 seconds, then relax. Repeat 10 times.

Shoulder Internal Rotation
Keep elbow bent at 90 degrees. Holding light weight, raise hand toward stomach. Slowly return. Repeat 10 times. Do 3 sessions a day.

Shoulder External Rotation
Keep elbow bent at 90 degrees at side. Holding light weight, raise hand away from stomach. Slowly return. Repeat 10 times. Do 3 sessions a day.

Shoulder Adduction (Isometric)
Press upper arm against a small pillow alongside your body. Hold 5 seconds. Repeat 10 times. Do 3 sessions a day.

Shoulder Abduction (Isometric)
Resist upward motion to the side, push arm against back of chair. Hold 5 seconds. Repeat 10 times. Do 3 sessions a day.