

Taking Care of Your **SHOULDER**

A Physical Therapist's Perspective



American Physical Therapy Association

Taking Care of Your Shoulder

The shoulder joint is capable of a wider and more varied range of motion than any other joint in the human body. This extraordinary flexibility has allowed human beings to do everything from pitch a baseball to paint the Sistine Chapel.

Unfortunately, because the shoulder *is* so flexible, it also tends to be unstable. And this instability contributes to a variety of problems, some of which can be treated with rest, and others which may require the expertise of a licensed physical therapist.

In this booklet you will learn about:

- the basic anatomy of the shoulder;
- common shoulder ailments;
- ways to reduce the risk of injury;
- exercises to do at home;
- physical therapy treatments.

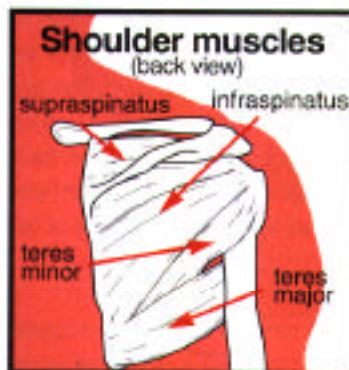
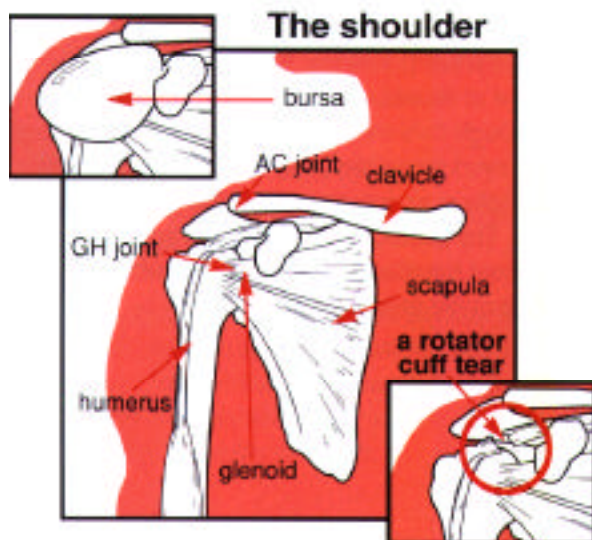
Certain athletes (throwers, tennis players, swimmers) are at especially high risk for shoulder problems, though they can occur in anyone. And in most cases—even those requiring surgery—a physical therapist plays an integral role in the rehabilitation process. The physical therapist's expertise can help you recover function as quickly as possible and get you back in the swing.

Shoulder Anatomy

The shoulder has three major joints: the glenohumeral (GH) joint, the acromioclavicular (AC) joint, and the scapulothoracic (ST) joint. Each joint can become dysfunctional and painful.

When people refer to the **shoulder joint** they're usually talking about the **glenohumeral joint**—the ball-and-socket which links the upper arm to the body through the collarbone. This joint has been compared to a golf ball sitting on a tee: the large, rounded end of the *humerus* (upper arm bone) moves within the shallow, scooped-out *glenoid* next to the end of the *clavicle* (collarbone). The anatomy of the glenohumeral joint permits the greatest flexibility and range of motion of any joint in the human body: it can also allow the shoulder to become unstable.

The *acromioclavicular joint*, more commonly called the **AC joint**, joins the *scapula* (shoulder blade) to the clavicle. The AC joint can become separated; this commonly occurs in contact sports, such as when a football player falls on the tip of the shoulder.



The third shoulder joint is the *scapulothoracic* or **ST joint**, which is the scapula as it lies over the thorax (back of the rib cage). The ST joint is attached to the thorax by muscles and tendons. Posture is closely

linked with the healthy functioning of the ST joint, which in turn affects the shoulder structure.

The shoulder is more than just these three joints, of course; it's an intricate system of bones, muscles, tendons, ligaments, and bursa sacs that work in precise harmony with each other.

Four muscles in this region form the **rotator cuff**, a complex of muscles that encircles the shoulder joint. This complex is a major source of muscular stability in the shoulder. The rotator cuff can be prone to tears and weakening due to a number of causes, including strain and overuse.

Tendons are strong fibrous cords that attach muscles to bones. Inflammation of the tendons is called *tendinitis*. An additional structure essential to this system is the bursa sac. **Bursa sacs** are fluid-filled membranes within and around the shoulder; they cushion the joints and help minimize friction. Inflammation of the bursae is known as *bursitis*.

What Causes Shoulder Problems?

There are several factors involved in shoulder disorders:

- the aging process, including disuse and atrophy;
- strain and overuse;
- trauma.



> "Overhead" athletes (throwers, swimmers, and tennis players) are prime candidates for shoulder trouble.

It's not unusual for many of the common shoulder problems described below to result from a combination of these factors.

The Aging Process

Whether you're 17 or 70, age has a profound impact on how the body responds to shoulder strain or trauma. As young people, the tissue around our shoulder joints is soft and resilient. Before age 30, if we "overdo it" through sports or physical labor, the most we're likely to suffer is a slight, short-lived soreness or stiffness in the tendons. This condition—**tendinitis**—is perhaps the most common of all shoulder problems. It rarely requires treatment in young people; as we enter middle age, however, the cumulative effects of years of tendinitis can result in much more serious ailments.

As we move into our 30s and 40s our muscles and tendons begin to undergo a structural weakening because of the aging process. By age 40 or 45, simple tendinitis can degenerate into actual tearing of the muscle tissue.

What's worse, each episode of tendinitis weakens the muscles further. Ultimately, this cumulative damage can lead to larger tears in the muscles and tendons. This is why conservative treatment of tendinitis at an early stage, along with education about the way the shoulder works and proper exercise, is crucial to preventing further (and more serious) injury.

Strain and Overuse

Imagine a 45-year-old woman—after spending the winter sitting at a desk or parked in front of the TV set—going out to play three tough sets of tennis on the first warm day of spring. On the day after, the soreness in her shoulder reminds her that she's not 25 anymore. So what does she do? She goes out and swims 50 laps of the butterfly stroke to reassure herself that she's still "got it." And the day after that she stays home from work—taking pain relievers, soaking in the tub, and wondering what went wrong. What went wrong, in simple terms, is strain and overuse, coupled with the effects of age.

Rotator Cuff Injuries. Tears in the rotator cuff can result from the progressive worsening of tendinitis, repetitive strain through overuse, or trauma—especially as a result of athletics.

The gradual tearing of the rotator cuff is a process similar to a shirt wearing out—it gets more and more threadbare until the edges fray or a hole appears. This sort of rotator cuff injury can be difficult to repair surgically, and conservative treatment under the direction of a physical therapist is often the best course of action. A "clean" tear to the rotator cuff (due to trauma) can often be repaired surgically. Whether or not surgery is indicated, a physical therapist will almost certainly be involved in all stages of the recovery process.

Researchers have found that rotator cuff tears occur more often in people who rarely exercise or who par-

ticipate in sports only sporadically. People who keep in shape through *regular* exercise are more likely to maintain strong bones and rotator cuff strength, and to diminish the chance of future shoulder injury.

Bursitis goes hand-in-hand with tendinitis. Inflamed bursa sacs may become thickened and reduce the "free" space in the joint, thus restricting movement. In extreme cases some of the bursa sacs can be removed surgically; otherwise, the therapeutic approach to treating bursitis and tendinitis is similar.

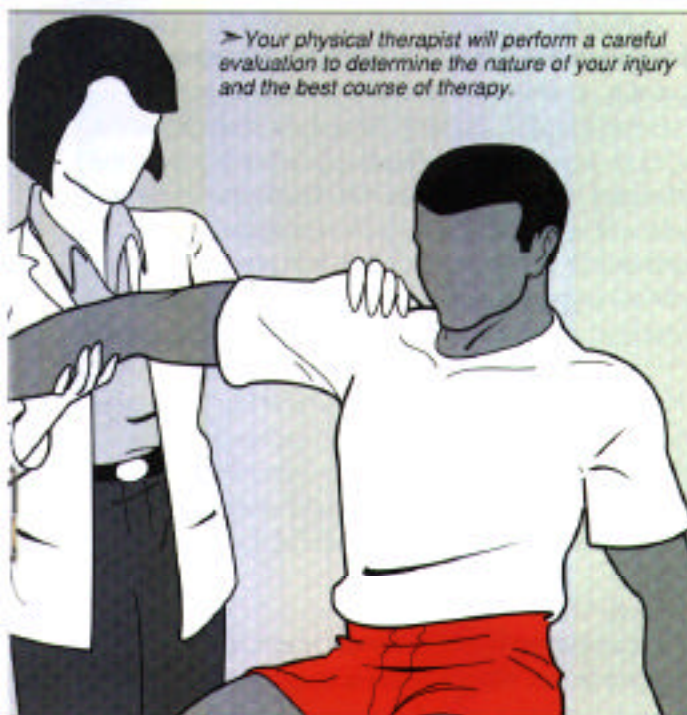
Osteoarthritis is a condition in which the joint cartilage deteriorates and the joint becomes gritty and rough. It can be caused by a number of factors, including disease, trauma, and infection.

Degenerative arthritis is often associated with wear-and-tear in the joints over a long period of time. The AC joint is particularly susceptible because it degenerates faster than any other joint in the body as we age. Arthritis in the glenohumeral joint usually appears somewhat later, and may be related to trauma earlier in life or rotator cuff problems.

Besides being painful, arthritis can lead to "**frozen shoulder**," which is the inability to fully move the arm due to tightness in the joint; attempts at movement in the later stages of the condition are usually painful. In advanced cases of arthritis involving the glenohumeral joint, arthroplasty—surgical replacement of the joint—is an option that can bring pain relief and greater mobility. The rehabilitation period, however, is crucial, with both the patient and the physical therapist playing active roles. Arthroscopy, a medical procedure in which miniature "telescopes" are inserted into the shoulder area, is another option in diagnosing and treating "frozen shoulder."

Subluxation is a quick, spontaneous "pop-in/pop-out" or partial dislocation of the shoulder joint. Subluxations can occur while playing "overhead" (throwing, tennis, swimming) sports, though the activity need not be strenuous to cause an occurrence. Subluxations usually happen to people who are approximately 14 to 30 years of age. Although they may not be painful, subluxations may, over time, contribute to problems of wear and tear in the shoulder region.

A **dislocation** is far more serious, involving tissue damage, stretching, and tearing. Unlike a subluxation, the shoulder doesn't "pop back in." The first step in treating a dislocated shoulder is almost always a trip to the emergency department. People under 20 and over 50 are most prone to dislocations, with younger individuals more prone to experience further dislocations in the future.



➤ Your physical therapist will perform a careful evaluation to determine the nature of your injury and the best course of therapy.

Both subluxations and dislocations require physical therapy to restore motion and build up strength. The goal is to enhance shoulder stability and reduce the chances of a recurrence.

“Double-jointedness,” or *hyperlaxity*, is a condition that many people are curious about; you may have seen “double-jointed” people do “tricks” or stunts. Hyperlaxity simply means that the joint in question (in this case, the glenohumeral joint) has a much greater range of motion than is usual. Hyperlaxity is not uncommon in athletes—it’s probably not possible to be a professional baseball pitcher and not be double-jointed to some degree. Hyperlaxity, however, can leave the patient predisposed to dislocations, subluxations, and rotator cuff tears. It’s especially important that these individuals develop and maintain rotator cuff strength through a safe exercise program designed by a physical therapist.

Impingement refers to a condition, sometimes painful, in which the shoulder joint lacks enough room to function properly. *Structural impingement* is a “built-in” organic condition, e.g., a bone spur in the shoulder joint. This situation is usually the result of years of tendinitis, rotator cuff injuries, and wear-and-tear. It is important to note that physical therapy cannot correct structural impingement; it’s crucial that the patient consult with an orthopedic physician.

Functional impingements often result from occupational situations (such as being hunched over a computer keyboard all day). Brief stretching and exercise breaks, along with **proper posture**, can help prevent and alleviate functional impingement.

Trauma

Trauma comes in two varieties: *microtrauma* and *macrotrauma*. Microtrauma is common in everyday life—it can occur while lugging an overstuffed suit-

case, or straining to reach a can of spaghetti sauce on the top shelf. In both cases we’re inflicting microscopic tears to the soft tissue around our shoulders. Although a single episode of microtrauma in itself is rarely serious, over time it can set the stage for shoulder ailments such as tendinitis, bursitis, and rotator cuff injuries.

Macrotrauma is the result of violent force, with falls and sports injuries being the most common causes. Depending on what position your arm is in when you fall or get hit, you can fracture your collarbone, dislocate your shoulder, or tear your rotator cuff.

How Physical Therapy Can Help With Your Shoulder Problems

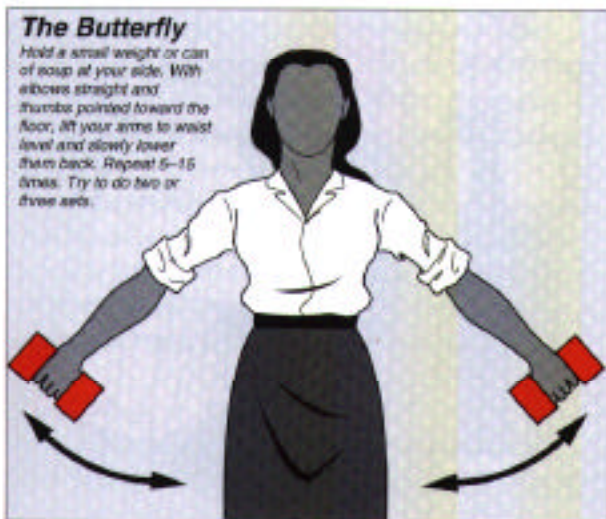
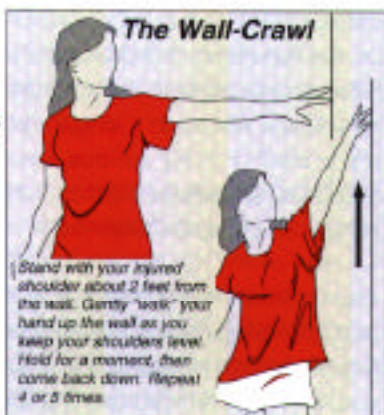
Whether your problem requires a physician’s care or not, a physical therapist will likely be involved in all phases of your shoulder’s rehabilitation. If surgery is a possibility, the physical therapist



will work with you before and after surgery to guide you through a program to help increase your strength and regain motion.

"Use It or Lose It."

In the past several years there has been a dramatic change in the health profession's approach to rehabilitation. The current thinking can be summed up as "use it or lose it." In the past, for example, you might have been told to keep your arm in a sling for weeks after a procedure such as rotator cuff surgery. Today, physical therapists make it their top priority to "get you going" again as soon as possible after surgery. Why? Because keeping the shoulder immobilized causes the muscles to weaken and atrophy; furthermore, immobilization weakens bones and joint cartilage, and promotes soft-tissue scarring.



Your physical therapist has the skills and knowledge to make your recovery as quick as possible, and the know-how to strike a balance between **rest** and **function** in the healing process.

Exercise—stretching and strengthening—is the key to preventing shoulder problems. If you already have a shoulder problem or pain it would be wise to



consult with a physical therapist before embarking on an exercise regimen. Beyond that, it's important to remember "exercise" is not a matter of high-tech weight-lifting machines or "going for the burn." You can stretch and strengthen during the three minutes per hour that you're not at your computer keyboard...or you can do it at home with light dumbbells, or

even with a couple of soup cans for weights.

Remember, exercise is like medicine—in the right doses it can work wonders; in the wrong doses it can do more harm than good.

Evaluation. Physical therapy places great emphasis on this process. Your therapist will take a medical history, perform a thorough evaluation to identify the problem, and discuss the findings and treatment plan with you. Pain felt in the area of the shoulder can sometimes be caused by a variety of conditions that are beyond the scope of this booklet, including a pinched nerve in the neck and cardiac ailments. If your problem isn't suitable for treatment by physical therapy, your physical therapist will refer you to the proper professional for treatment.

Treatment. Your physical therapist, often in consultation with a physician, will design a treatment regimen tailored to your individual problem, working to restore flexibility and ease discomfort. Treatment may include heat, cold, massage, ultrasound, electrical stimulation, traction, or mobilization, as well as exercises for relaxation, conditioning, restoring range of motion, strength, endurance, and coordination.

Aftercare and Education. You don't need to become an expert in physical therapy to avoid or overcome injury, but you may need to learn some new habits or modify your physical activity, whether it involves work, recreation, or both. Once your physical therapy goals are met, your physical therapist will help you continue therapy on your own with a home program designed to fit your needs. The goal of physical therapy is to return you to normal activity as soon as possible, with the skills you need to prevent reinjury or disability.

About APTA

The American Physical Therapy Association is a national professional organization representing more than 60,000 physical therapists, physical therapist assistants, and students throughout the United States. APTA serves its members and the public by expanding understanding of the physical therapist's role in the health care system.

As respected members of the professional health care community, **licensed physical therapists** practice in a variety of settings, including hospitals, industrial and sports settings, home care, schools, and in private practice.

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Single copies of brochures are free and bulk quantities are available. Send for the Resource Catalog, APTA, 1111 North Fairfax Street, Alexandria, VA 22314-1488.

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