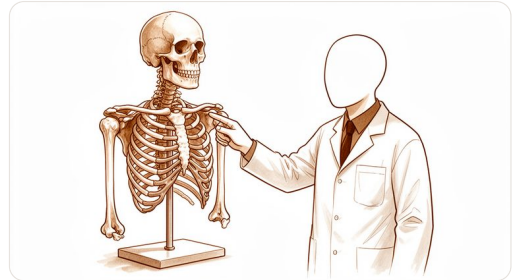


How your shoulder works



Your shoulder is a shallow ball-and-socket joint surrounded by muscles, tendons and ligaments that give it both reach and stability.

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Your shoulder is the most mobile joint in your body. It lets you reach for a high shelf, throw a ball, or scratch an itch on your back. This freedom of movement comes at a cost. Because it moves so much, it is also one of the most common sites for injury. Understanding how these parts fit together helps you make sense of your diagnosis and recovery plan.

The bones

Four main bones create the structure of your shoulder girdle. The clavicle, or collarbone, runs horizontally across the top of your chest. You can feel this long bone easily under the skin at the base of your neck. It acts as a strut, holding your arm away from your torso.

The scapula, or shoulder blade, sits on the back of your rib cage. It is a flat, triangular bone. You can feel its edges when you move your arm. The bottom tip of the scapula is often visible when you round your shoulders forward.

The humerus is the long bone of your upper arm. Its top end is rounded and fits into the shoulder socket. The bottom end connects to the elbow.

The shoulder blade also features a shallow cup called the glenoid. This is the socket part of the shoulder joint. It is much shallower than the hip socket. This shallow design allows for wide movement but requires strong muscles to keep the arm bone in place.

Think of your shoulder like a golf ball resting on a tee. The humeral head is the ball. The glenoid is the small tee. This setup allows for incredible range of motion, but it also makes the joint inherently unstable without support.

The joints and how they move

Your shoulder complex involves three distinct joints working in harmony.

The glenohumeral joint is the main shoulder joint. It is a ball-and-socket joint. The rounded head of the humerus fits into the glenoid socket. This joint allows movement in every direction. You can lift your arm forward, out to the side, and rotate it inward or outward. This is the joint you use when throwing a ball or waving hello.

The acromioclavicular joint connects the end of the clavicle to the acromion of the scapula. This is a plane or gliding joint. It allows small sliding movements. These slides are essential when you lift your arm above your head. Without this slight glide, your arm would hit your collarbone.

The scapulothoracic “joint” is not a true joint with cartilage. It is the movement of the shoulder blade sliding over the rib cage. This movement is crucial for full arm elevation. When you raise your arm, your shoulder blade rotates upward. This action adds extra range to your shoulder.

The elbow is a hinge joint. It primarily allows flexion and extension. You bend your elbow to bring your hand to your mouth. You straighten it to push a door open. The bony point at the back of your elbow is the olecranon. This is the tip of the ulna bone. Be careful not to confuse this with the “funny bone.” The tingling sensation comes from the ulnar nerve, which runs behind the inner elbow bone. Striking that nerve causes the zap, not the bone itself.

The muscles, tendons and ligaments

Muscles pull on bones to create movement. Tendons are the tough cords that attach muscle to bone. Ligaments are bands of tissue that connect bone to bone, providing stability.

The rotator cuff is a group of four muscles and their tendons. They surround the shoulder joint like a cuff. Their main job is to hold the humeral head firmly in the glenoid socket. They also help rotate your arm. When you hear about a “rotator cuff tear,” it means one of these tendons has damaged.

The biceps muscle runs down the front of your upper arm. Its long tendon attaches to the top of the glenoid socket. This tendon helps stabilize the shoulder. It also helps bend your elbow and rotate your forearm. Pain in the front of the shoulder often relates to this tendon.

The deltoid is the large, triangular muscle covering the top of your shoulder. It is the primary muscle for lifting your arm away from your side. It gives your shoulder its rounded shape.

Ligaments provide passive stability. The glenohumeral ligaments are thick bands inside the joint capsule. They prevent the arm bone from dislocating forward or backward. The acromioclavicular ligaments hold the collarbone to the shoulder blade. They prevent the collarbone from riding too high.

Think of your shoulder muscles as a team of ropes holding up a flagpole. If one rope is weak or broken, the pole becomes wobbly. The rotator cuff muscles are the critical ropes keeping the pole centered.

The nerves

Nerves carry signals from your brain to your muscles and skin. They control movement and sensation.

CQ HAND + UPPER LIMB

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The brachial plexus is a network of nerves that starts in your neck. It passes under your collarbone and into your arm. It splits into several major nerves that serve the shoulder and arm.

The axillary nerve wraps around the back of the shoulder joint. It supplies the deltoid muscle. It also provides sensation to the skin over the outer part of your shoulder. Damage to this nerve can cause weakness in lifting your arm and numbness on the side of your shoulder.

The suprascapular nerve runs across the top of the shoulder blade. It supplies two of the rotator cuff muscles. It helps with lifting and rotating the arm.

The musculocutaneous nerve travels down the front of the upper arm. It supplies the biceps muscle. It provides sensation to the outer forearm.

The radial nerve runs down the back of the arm. It extends your wrist and fingers. It also provides sensation to the back of your hand.

The median nerve runs down the center of your arm. It crosses the wrist into the hand. It controls most of the thumb muscles and provides sensation to the thumb, index, and middle fingers.

The ulnar nerve runs down the inner side of the arm. It passes behind the medial epicondyle at the elbow. It controls many small hand muscles. It provides sensation to the ring and little fingers. This is the nerve that causes the “funny bone” sensation when hit.