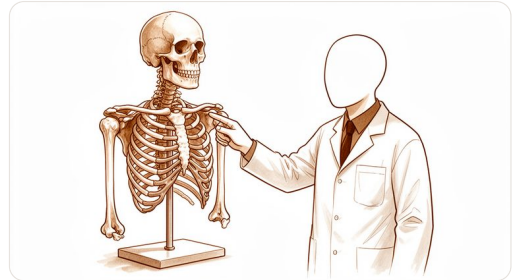


How your elbow works



Your elbow is a hinge joint plus a small pivot — the humerus meets the ulna and radius to let you bend, straighten and rotate the forearm.

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The bones

Your elbow is not a single bone. It is a complex hinge where three bones meet. The upper arm bone is the humerus. It ends in a spool-like shape at the bottom. This shape fits into the forearm bones below.

The two forearm bones are the radius and the ulna. The ulna is the larger bone on the pinky side. It has a hook-like end called the olecranon. You can feel this bony point at the back of your elbow. It is the tip of the ulna that rests in a groove on the humerus.

The radius is the smaller bone on the thumb side. Its head sits near the elbow but does not form the main hinge. Instead, it rotates around the ulna. This arrangement allows your forearm to twist.

Think of the elbow like a door hinge. The humerus is the door frame. The ulna is the door. The radius is a separate piece that spins inside the frame. This design gives your arm both strength and flexibility. You can feel the bony prominence on the inside and outside of your elbow. These are the epicondyles. They are not part of the joint itself. They are attachment points for muscles and ligaments.

The joints and how they move

Your elbow contains three distinct joints working together. They are grouped into two main areas.

First is the ulnohumeral joint. This is a hinge joint. It connects the humerus to the ulna. It allows your arm to bend and straighten. This movement is called flexion and extension. You use this motion when you bring a spoon to your mouth. It also lets you push a door open. The joint is stable because the bones fit tightly together.

Second is the radioulnar joint. This is a pivot joint. It allows your forearm to rotate. This movement is called pronation and supination. Pronation turns your palm down. Supination turns your palm up. You use this when you turn a doorknob or pour water from a pitcher. The rotation happens roughly equally at the top and bottom of the forearm. It is not just an elbow movement.

There is also a small joint between the radius and humerus. It helps guide the radius during rotation. Together, these joints let you position your hand anywhere in space. Your elbow bends to about 145 degrees. This range is enough for most daily tasks.

The muscles, tendons and ligaments

Muscles pull on bones to create movement. They are connected to bones by tendons. Tendons are strong, cord-like tissues.

The biceps muscle is on the front of your upper arm. Its tendon crosses the elbow. It helps bend your arm. It also helps rotate your forearm. The triceps muscle is on the back of your upper arm. Its tendon attaches to the olecranon. It straightens your arm. This is the main muscle for pushing.

Ligaments hold the bones together. They provide stability. The medial collateral ligament is on the inner side of the elbow. It prevents the elbow from bending outward. The lateral collateral ligament is on the outer side. It prevents the elbow from bending inward. These ligaments are crucial for stability during sports.

Think of the ligaments as strong rubber bands. They keep the bones aligned. The tendons act like ropes. They transmit the force from the muscles to the bones. When you lift a heavy box, these structures work together. They absorb the stress and prevent injury.

The nerves

Nerves carry signals between your brain and your body. They control movement and sensation. Three main nerves pass through the elbow region.

The ulnar nerve runs behind the medial epicondyle. This is the inner bony bump of your elbow. It is often called the “funny bone.” Striking this area causes a tingling sensation. This is not pain in the bone. It is the nerve being compressed. The ulnar nerve controls sensation in the ring and little fingers. It also controls small muscles in the hand.

The median nerve runs through the center of the elbow. It passes between the two heads of the biceps muscle. It travels down the forearm into the hand. It controls sensation in the thumb, index, and middle fingers. It also helps bend the wrist and fingers.

The radial nerve runs along the back of the arm. It wraps around the humerus. It controls the triceps muscle. This allows you to straighten your elbow. It also helps extend your wrist and fingers.

If you feel numbness in your fingers, it may relate to these nerves. The ulnar nerve affects the pinky side. The median nerve affects the thumb side. The radial nerve affects the back of the hand. Understanding these paths helps explain symptoms. It also clarifies why certain injuries cause specific problems.