

Anatomy of the Human Shoulder Joint

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The shoulder joint is the junction between the chest and the arm. The range of movements and the strength of the muscles around the shoulder depend on two shoulder joints, many muscles, tendons, and bones of the upper arm and the upper back.

There are two joints at the shoulder.

- **The glenohumeral joint:** The ball-and-socket junction of the top of the arm bone and the socket of the shoulder blade
- **Acromioclavicular joint:** The junction of the collar bone with the shoulder blade

Most shoulder motion occurs at the ball-and-socket glenohumeral joint, but for full motion of the shoulder, the acromioclavicular joint must also be functioning normally.

Shoulder Bones

The three bones of the shoulder are the:

1. Humerus (arm bone)
2. Scapula (shoulder blade)
3. Clavicle (collarbone)

The scapula has one part that forms a socket for the ball-and-socket shoulder joint; this is called the glenoid. The glenoid is covered with smooth cartilage.

The rounded top of the arm bone (humerus) contacts the shoulder blade at the glenohumeral joint.

The acromioclavicular joint is where a different part of the shoulder blade, the acromion, connects to the collarbone.

The socket of the shoulder joint is part of the scapula, and if scapular movement is not normal, then shoulder function cannot be normal. Many people with shoulder pain, weakness, and instability often need to focus on improvements in their scapular function to help improve their shoulder mechanics.

Shoulder Muscles

There are 17 muscles that cross the shoulder joint. The periscapular muscles help to control the movements of the shoulder blade. This movement is critical to normal shoulder function.

Rotator Cuff

The rotator cuff is a group of four muscles and tendons that surround the glenohumeral joint. The rotator cuff muscles are important for the movements of this joint.

The rotator cuff is important in many routine activities, and when it's injured, it can cause severe pain. When the rotator cuff is inflamed or irritated, this is referred to as rotator cuff tendonitis. When the tendons of the rotator cuff have torn, this is called a rotator cuff tear.

Shoulder Capsule

The shoulder capsule surrounds the ball-and-socket part of the shoulder joint. The capsule separates the joint from the rest of the body and contains the joint fluid.

Several ligaments make up parts of the joint capsule, and these ligaments are important in keeping the shoulder joint in the proper position. When the shoulder dislocates, the ligaments of the shoulder capsule can be torn.

The tension of the shoulder capsule is important:

- If the capsule is too loose, the condition is called multidirectional instability.
- When the shoulder capsule is too tight, the condition is called a frozen shoulder (adhesive capsulitis).

Shoulder Labrum

The labrum is a rim of cartilage that surrounds the socket of the shoulder joint. The socket of the shoulder joint is shallow, and the labrum gives the socket more depth, and thus more stability. The labrum also serves as the attachment of a major tendon in the shoulder, the biceps tendon.

Labral tears in the shoulder can cause pain, instability of the joint, or both. Labral tears are usually classified based on their location. The most common labral tears are those associated with a shoulder dislocation, called a Bankart tear, and those associated with biceps tendon problems, called SLAP tears.

5 Sources

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