

Newsletter

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Rotator Cuff (shoulder) Injuries

The shoulder is a ball and socket joint. The arm bone (humerus) ends in a ball shaped surface (humeral head) that fits into a very shallow socket (glenoid). This socket is part of the wingbone (scapula). This shallow socket allows the shoulder joint tremendous range of motion.

The glenohumeral joint is a ball and socket joint similar to the hip. However, unlike the hip, it does not receive much stability from its bony structure. Instead, the shoulder has several soft tissue modifications that help improve its stability, including ligaments (connecting bone to bone) cartilage and muscle.

The ligaments of the shoulder are the thickest on the front and undersurface of the shoulder, the direction in which most dislocations occur. A rim of cartilage, the labrum, surrounds and serves to deepen the socket. Finally, the rotator cuff is a group of four small muscles that originate from different positions on the scapula, but insert through a common tendon onto the head of the humerus. These muscles help improve the stability of the joint by "steering" the ball on the socket. Shoulder injury/instability results from an inability of the rotator cuff and ligaments of the shoulder to maintain the ball firmly within the socket. Because the rotator cuff muscles originate on the shoulder blade, it should be apparent that shoulder stability is largely dependent upon the scapular muscles (trapezius, rhomboids, serratus anterior). If these muscles were deficient, the rotator cuff would not have a stable platform from which to pull.

The rotator cuff is a group of four muscles which rotate the humerus and hold the shoulder in place by keeping the humeral head in the proper position inside the glenoid socket. These muscles allow everyday repetitive motions like scratching behind your head or back, painting, waxing, using hand tools, reaching and lifting overhead. They are used extensively in athletic activities like throwing a ball, serving a tennis ball and driving a golf ball. Thus, chronic wear and tear or a fall or collision can cause injury to the rotator cuff. It is not uncommon for a patient to have intermittent shoulder pain for several years which is not completely relieved by rest and anti-inflammatory medication. Symptoms may include pain in the front, side, back or deep inside the shoulder especially with overhead movements. Putting on a bra, shirt or coat may be painful. To properly diagnosis a rotator cuff injury a complete examination of the shoulder and neck must be done.

Injury to the rotator cuff comes in the form of muscle strain and tendonitis. There are three grades of strains.

- Grade I is a mild tear in the muscle which allows complete or almost complete range of motion with little or no pain.
- Grade II is a moderate tear of the muscle which decreases range of motion with moderate to severe pain.
- Grade III is a severe or complete tear of the muscle which severely limits range of motion.

Tendonitis is an inflammation and fraying of the tendon (area where the muscle attaches to the bone). When these muscle and tendon tears heal the new tissue is called scar tissue. There are four problems with scar tissue:

- It is weaker than the original muscle tissue
- It is less elastic (flexible) than the original muscle tissue
- It forms in all different directions, not just along the lines of the original muscle

- Many small nerve endings grow into the area

These changes make the injured area very painful when it is moved too far or too strenuously.

Treatment of rotator cuff injuries includes proper exercise to strengthen and gently stretch the rotator cuff muscles and deep massage (Active Release Techniques) to break up the scar tissue.

Ultrasound and electrical muscle stimulation can help speed healing as well. When returning to exercise remember R.E.S.T.= Resume Exercise below the Soreness Threshold. Rehabilitative exercise should not cause pain while performing the exercise and little pain afterwards.