

The socket at the glenohumeral joint (glenoid fossa) is too shallow to offer any bony security for the head of the humerus. As ligaments would severely limit joint movement, muscle tension must be employed to pull the humeral head in to the shallow scapular socket during shoulder movements. Four muscles fulfill this function: the **supraspinatus**, **infraspinatus**, **teres minor**, and **subscapularis** ("SITS") muscles. These muscles form a musculotendinous cuff around the head of the humerus, enforcing joint security. Especially effective during robust shoulder movements, they generally permit the major movers of the joint to work without risking joint dislocation in normal, reasonable applications. Long-term abuse and overuse are quite another matter.

The **SITS muscles** have come to be known as the *rotator cuff muscles*, even though one of them, the supraspinatus, is an **abductor** of the shoulder joint and not a rotator. Indeed, among some health care providers, the supraspinatus is known as the *rotator cuff* in the context of a "rotator cuff tear."

The shoulder joint and the supraspinatus muscle/tendon are subject to early degeneration from overuse. The problem is generally one of impingement (chronic physical contact and friction) and degeneration among the acromion (1), the coracoacromial ligament (2), the distal clavicle and related acromioclavicular (AC) joint (3), the tendon of the supraspinatus as it passes under the acromion (4), and the subacromial bursa (5), which takes the heat of friction... to a point. Those with a down-turned acromion or a previously dislocated, offset acromioclavicular joint are especially vulnerable to impingement (supraspinatus tendinitis and subsequent tearing, subacromial bursitis, acromioclavicular joint degeneration, limitation of shoulder motion, and pain). All overhead activities (such as those of professional drapery hangers, ceiling plasterers, baseball pitchers, etc.) and acromial loading (hose-carrying firemen, those carrying heavy purses/bags by straps over the shoulder, mail delivery persons, etc.) if pursued over a sustained period, can induce changes (bony spurring, bursal destruction) with painful signs and symptoms.