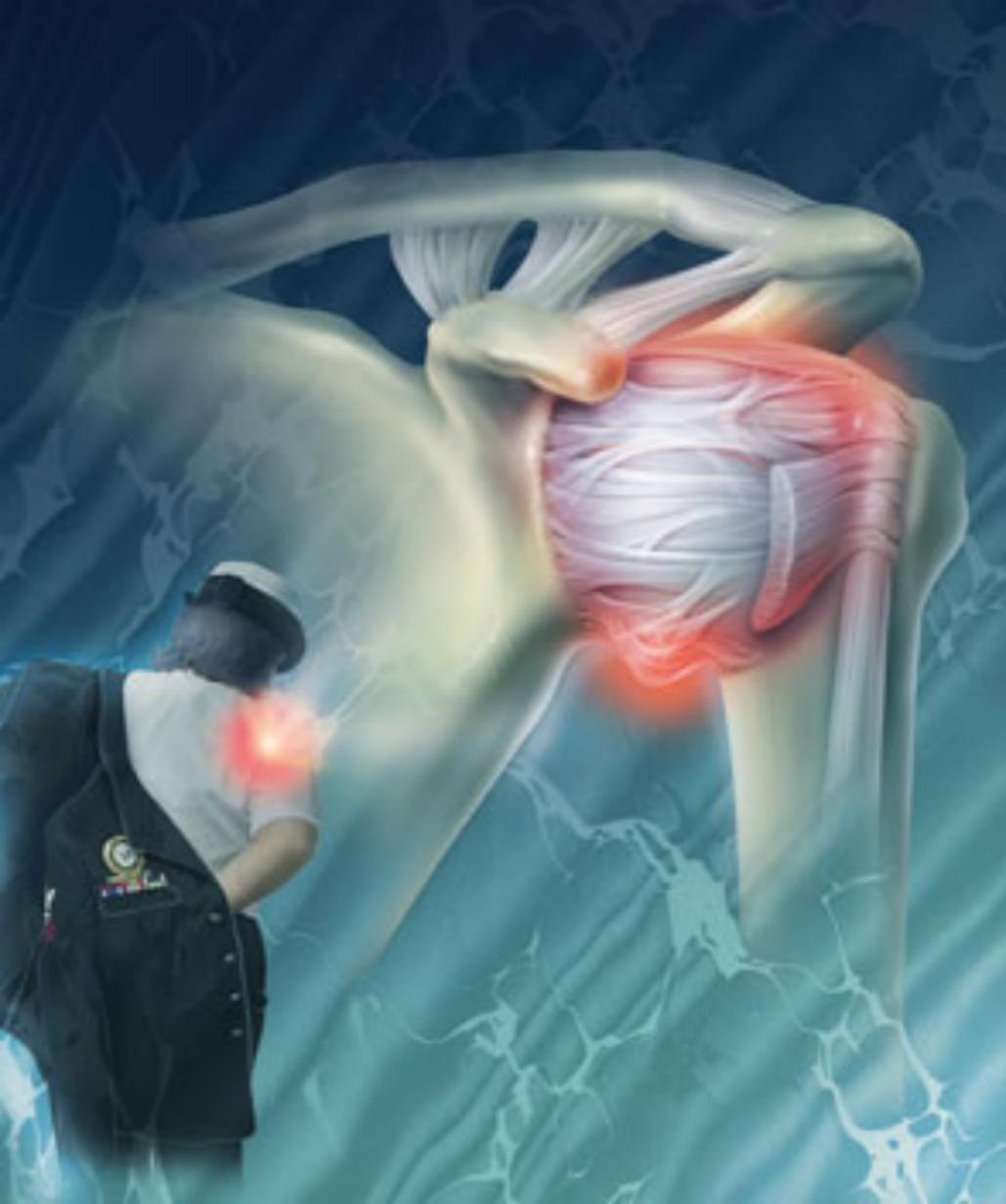
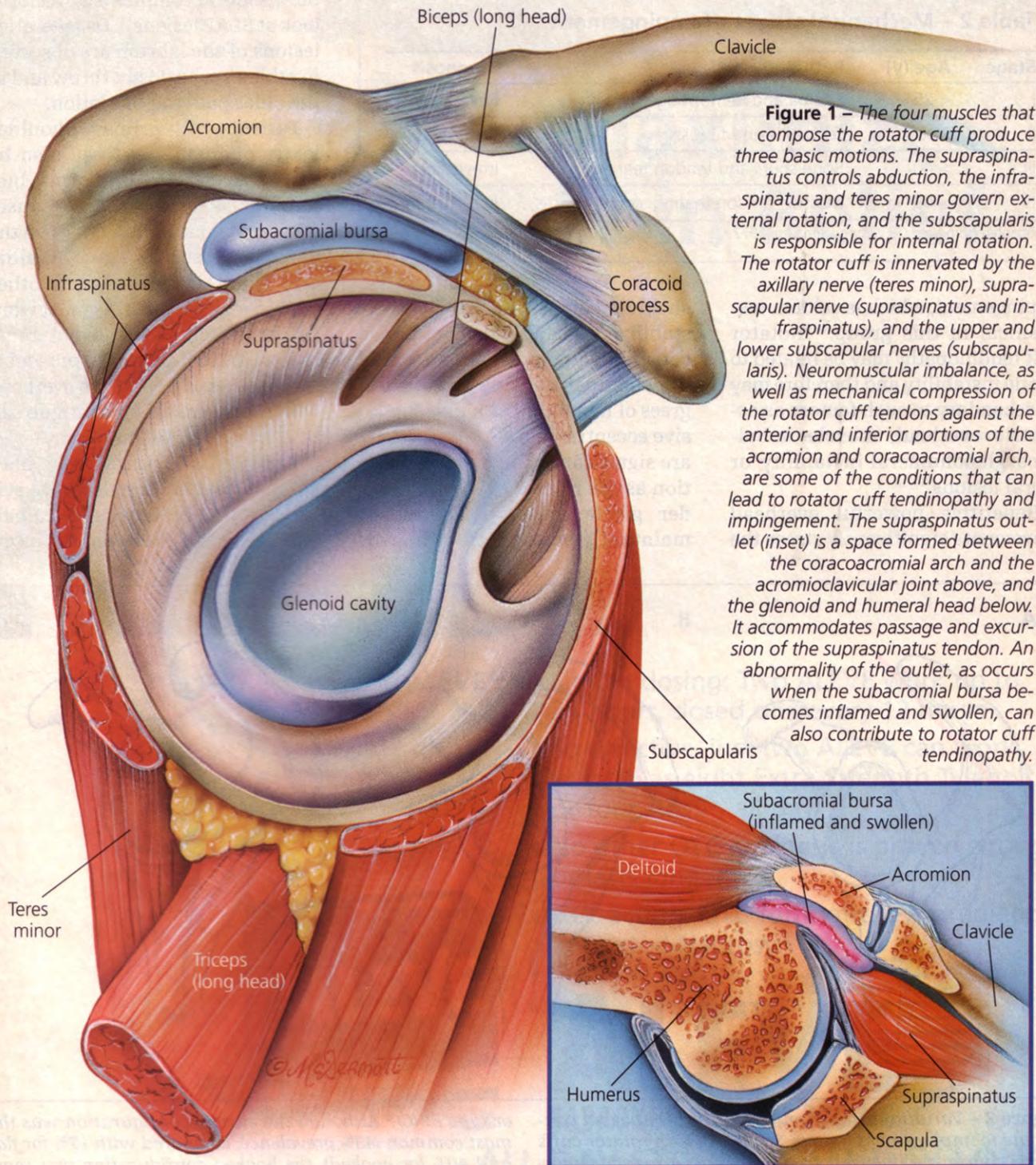


## Dr. Gene Desepoli's

### Impingement Syndrome Treatment Sheet

<b>Pathology:</b>	Caused by the compression of the supraspinatus tendon and subacromial / subdeltoid bursa (and sometime the biceps tendon) between the greater tubercle and acromion process.
<b>History:</b>	There is usually altered biomechanics from a weak subscapularis, a weak infraspinatus or failure to externally rotate the humerus during abduction. A round-shouldered posture makes one highly prone to impingement, as well as activities that require repetitive internal rotation of the glenohumeral joint.
<b>Assessment:</b>	A "painful arc" is a hallmark sign. (pain during 60-120 degrees of abduction) Altered scapulohumeral rhythm will be present. Suprapspinatus tendonitis and subdeltoid bursitis may be a present. (positive subacromial push button test, positive empty can test) Pain may be present during resisted abduction and passive adduction of the humerus. If the subscapularis muscle has compensated or become overused, look for trigger points and reduced range of motion.
<b>Bolstering/ Patient comfort:</b>	Patient may be treated in several positions, including side-lying. Ensure that all muscles are relaxed during treatment.
<b>Heat/Cold Therapy:</b>	Ice in acute cases. In later stages, heat can be applied in the axilla to better warm the capsule. (if the patient's medical status does not contraindicate it).
<b>General Massage:</b>	Massage of all surrounding muscles is appropriate. Altered biomechanics must be corrected for lasting relief to occur.
<b>Specific Massage:</b>	Palpate and treat the subscapularis muscle and eliminate trigger points. Thumb stripping or effleurage directly to the muscle in the axillary area. Treat the underlying bursitis with ice and massage, if appropriate.
<b>Evaluate / Treat TrPs:</b>	same as above
<b>Stretching Exercises/ Range of Motion:</b>	Restoration of subscapularis flexibility is important. (see pseudo-frozen shoulder sheet) Address individual muscles which may contribute to decreased scapular mobility.
<b>Strengthening:</b>	Isometric contractions at first, followed by more active strengthening if the patient permits. The muscle is strengthened by adding resistance to internal rotation of the shoulder. Note: An important function of the subscapularis is to stabilize the humeral head during abduction. It requires both eccentric strength and flexibility to accomplish this.
<b>Patient Education:</b>	Educate the patient on the importance of self-stretching exercises to assist in restoring normal length-tension relationships to all muscles. Restoration of proper force-coupling is necessary to allow proper scapulohumeral rhythm.
<b>Ergonomic factors:</b>	Avoid periods of prolonged immobilization and encourage the patient to take frequent breaks to perform mild ROM exercises
<b>Medical Referral</b>	It is appropriate to co-treat the patient with another medical professional and/or receive medical approval. Other more serious conditions may be overlooked.





**Figure 1** – The four muscles that compose the rotator cuff produce three basic motions. The supraspinatus controls abduction, the infraspinatus and teres minor govern external rotation, and the subscapularis is responsible for internal rotation. The rotator cuff is innervated by the axillary nerve (teres minor), supra-scapular nerve (supraspinatus and infraspinatus), and the upper and lower subscapular nerves (subscapularis). Neuromuscular imbalance, as well as mechanical compression of the rotator cuff tendons against the anterior and inferior portions of the acromion and coracoacromial arch, are some of the conditions that can lead to rotator cuff tendinopathy and impingement. The supraspinatus outlet (inset) is a space formed between the coracoacromial arch and the acromioclavicular joint above, and the glenoid and humeral head below. It accommodates passage and excursion of the supraspinatus tendon. An abnormality of the outlet, as occurs when the subacromial bursa becomes inflamed and swollen, can also contribute to rotator cuff tendinopathy.