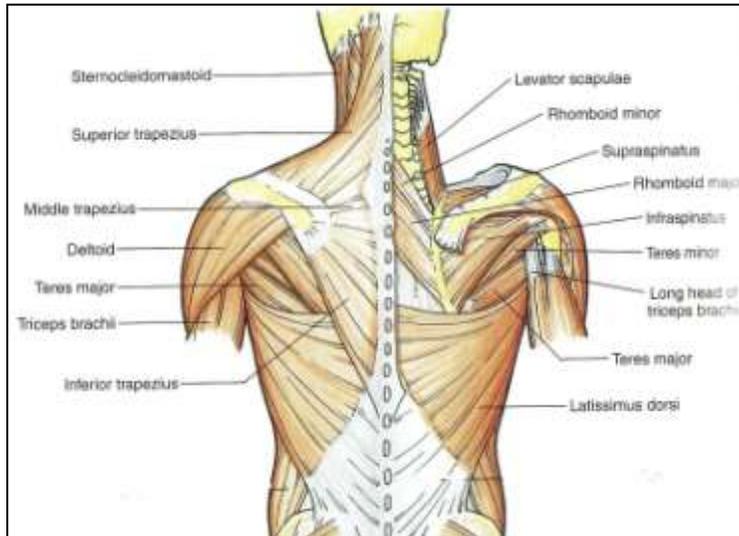


Scapula Stabilisation

The upper quadrant is composed of the *neck*, *scapula* (shoulder blade) and the *arm complex*. The arm's only attachment to the skeleton is through its articulation with the scapula. The scapula's only attachment to the skeleton is through the collar bone. The scapula is therefore essentially floating on the chest wall. It is a floating platform off which the arm is able to work. The inherent stability of the scapula is gained from the muscles attached to it.



There are up to 20 muscles that attach to the scapula. A number attach to the *humerus* (arm bone), the most important of which being the rotator cuff. These muscles serve to stabilise the head of the humerus from sliding within its shallow joint. They also prevent the head of humerus riding upwards and causing tendon irritation and impingement when you move your arm. Stability proximally will give stability further down the kinetic chain in the elbow and wrist.

The rest of the muscles attach to the mid back and up into the neck. There are three

primary muscles that stabilise the *scapula* against the chest wall. These primary stabilising muscles fix the platform so that the shoulder muscles attached to it can work efficiently and effectively to move your arm. These scapula stabilisers work together in harmony to provide the necessary *scapula stability*, as well as provide the stability through the mid-back and neck.

We see that pathology in the neck, mid back or arm can cause a disruption in the harmonious working of the *scapula stabilisers*. The *scapula stabilisers* appear to become inhibited and 'switch off' in the presence of pain. This leads to overworking of the other scapula muscles attached through the neck and mid-back, as they attempt to *stabilise* the *scapula*. These muscles however are not designed to do this and fail, frequently leading to increased pressure through the mid-back, neck and shoulder joints.

With inhibition of the *scapula stabilisers* the arm no longer has a fixed platform from which to work. The rotator cuff can no longer work efficiently and effectively and can begin to fail. This can lead to rotator cuff pathology and altered shoulder joint activity. The altered movement proximally can then be transmitted through the kinetic chain to the elbow and wrist, causing over working and eventual failure of the musculature controlling these joints.

In this situation we see the development of *trigger points* (tight, painful knots) in the overworked muscles and the perpetuation of upper quadrant problems such as neck and mid-back pain, rotator cuff dysfunction and tennis elbow.

Treatment of upper limb dysfunctions must include assessment of the *scapula stabilisers and scapular control*. Regaining control of the inhibited, *quiet* muscles and inhibition of the overactive, *loud* muscles is paramount if full restoration of upper quadrant function is to be achieved.

Re-education of stabilising muscles is not merely a question of strength but one of control. It takes time, concentration and effort to re-educate the body to use these small muscles again. Your physiotherapist will guide you and teach you on how to use these muscles in a treatment session, but it is your effort in practicing them the rest of the time that will make the real difference.