the Connection

HCE

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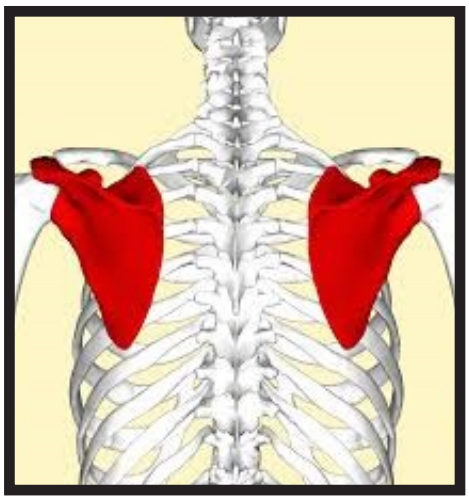
How the Body Works…
17 Reasons—To Name A Few

Shoulder pain and dysfunctions are common musculoskeletal complaints experienced by students, athletes and employees alike. But while attention is often placed on the shoulder joint, the shoulder blade (scapula) is often overlooked. The scapula is one of the most complicated bones in the human body to understand because of the complex way that it moves and how the movement is created.



The scapula contains two real boney joints: one with the upper arm bone (humerus) and one with the collar bone (clavicle). It also forms a pseudo joint where the bone glides on top of the rib (thoracic) cage. When you move your arm in any direction there is a combination of movement between these three joints. The scapula has the ability to glide on the thoracic cage in 3 planes of motion. When you reach up and over your head to get something down off the shelf, it is necessary for your scapula to depress, upwardly rotate, and externally rotate. The scapula provides most of the movement between 60^0-140^0 of arm elevation where it moves at a 2:1 ratio with the humerus. When this does not occur, there can be a compromise of the space between the scapula and the humerus where the main rotator cuff tendon lies which leads to shoulder "impingement".

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Truths/Myths
'I Heard It Said'

I've often heard it said that, "I don't need to work out because I have a physical job. It keeps me in shape." While this is true to some degree, we must also keep in mind that our bodies are constantly adapting to the forces we are subjected to and like marriage, it is for better or worse. The cells and tissues inside our bodies are constantly dying and rebuilding because they are alive! If an employee's job requires him to lift 75 lbs. and his safe maximum lifting ability is 85 lbs., then he/she has a 10-15% "window of safety". This margin reduces the risk of injury. If that employee is a couch potato and does not do any home or recreational activities that sustain his 85 lbs. lifting ability, his/her body will adapt over time to the heaviest thing that he/she does. In this instance the employee's body would negatively adapt and become WEAKER over time to where the job requirement is equal to their max safe lifting capacity. Their "window of safety" would be erased. Research has shown that consistently lifting at your maximum safe capacity places you at a significantly increased risk of injury. Your HCE physical therapist can develop a job specific exercise routine to help your body adapt in a POSITIVE way and maintain your "window of safety".

How The Body Works...

17 Reasons—To Name A Few From Pg. 1

Except at the sternoclavicular joint, where the clavicle attaches to the sternum, the scapula has no direct connection with the boney superstructure of the body. It is held onto the body only through muscle attachments, 17 to be exact. These 17 muscles are connected to over 30 other bones, hence the scapula is also integrated directly with over 30 other joints. It is critical for all of these muscles to work in coordination with one another to allow for the precise movement of the scapula in all three planes of motion that allows the shoulder to function properly and stay healthy. When there is a lack of smooth coordinated movement between the scapula and the humerus or when there is prominence or winging on the middle border of the scapula, this is labeled as scapular dyskinesis. Examples of dyskinesis are early scapular shrugging with lifting, rapid downward rotation of the scapula when lowering your arm or "winging" of the scapula when raising the arm.

Scapular dyskinesis can have interdependent relations with decreased strength, mobility, speed, accuracy, consistency and pain when moving your arm. It is important when training and rehabilitating the shoulder that the scapula is assessed in all three planes of motion. HCE physical therapists are highly trained to determine not only how the rest of the body is influencing the scapula but how this complicated bone and its attachments are influencing the rest of the body!

Healthy/Unhealthy Habits

The Slouch

Everyone has heard their mother say stop slouching and sit up straight! The truth is that good posture has significant effects on your shoulder health. Try this experiment. Sit in a chair as tall as you can in the best posture you know how. Now lift your hand in front of you towards the ceiling and take a note of how high you can reach. Now slouch and repeat the lift. There is a dramatic decrease in your ability to reach up. By slouching, you change the position of your mid back and rib cage

which places the shoulder blade in a poor position. It is no longer able to rotate appropriately as you lift your arm and you have impinged your shoulder. Your HCE Physical therapist can address the multiple reasons why you may not be able to correct your slouched posture on your own!

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True Stories...
The HCE Difference

Luis works in a manufacturing plant where he makes metal casting by pouring molten iron into molds. This job requires him to reach up repeatedly pull down on a wheel which is located head high in order to raise and lower a large ladle the iron is held in. He also needs to push and pull the ladle while his arm is raised in this position. Luis came into our clinic complaining of shoulder pain at the tip of his shoulder where the collar bone (clavicle) connects into the shoulder blade (the AC joint). Luis had pain while he was turning the ladle wheel and when he was picking up heavy objects using his left arm.

Most doctors and many physical therapists would have focused their treatment around the site of pain. This treatment would likely have included diagnostics (X-ray and MRI), medication to decrease inflammation, as well as stretching and strengthening exercises of his rotator cuff muscles.

Having a deeper understanding of the integrated movement system, the human body, we did two things on the first day which eliminated Luis's pain. We mobilized his first rib and the other end of the collar bone (the SC joint). When the arm is raised the collar bone needs to translate up and down as well as rotate. In Luis's case, his rib was elevated which pushed the SC joint out of place and didn't allow these motions to occur correctly. This placed excessive stress on the other end of the bone at the AC joint causing it to become pinched and painful. Once the rib and SC joint moved correctly, the stress was taken off of the AC joint. Treatment of his AC joint and shoulder would have been ineffective at changing his pain and dysfunction because it would not address what created the problem in the first place!

Luis was educated in shoulder mechanics, given a simple exercise which mobilized his rib and was discharged after being seen for only two visits. The HCE clinical model allowed him to continue to work full time and pain free with exceptional results!