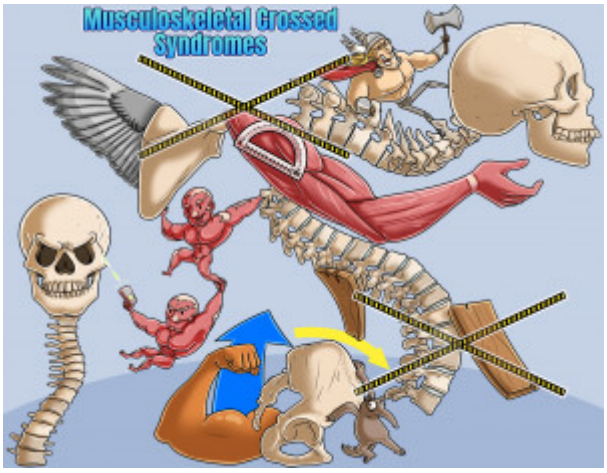
Musculoskeletal Crossed Syndromes

Musculoskeletal Crossed Syndromes refers to a pattern of muscle imbalances in the body that can cause pain and dysfunction. These syndromes are characterized by certain muscle groups becoming overactive or tight while others become underactive or weak, leading to postural changes and movement dysfunction. The most common examples of these syndromes include Upper Crossed Syndrome and Lower Crossed Syndrome. Upper Crossed Syndrome is characterized by forward head posture and rounded shoulders, while Lower Crossed Syndrome involves an anterior tilt of the pelvis and increased lumbar lordosis. These imbalances can result in chronic pain and discomfort, and it's essential to identify and address these issues to prevent further complications.



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Upper Crossed Syndrome

Upper Crossed Syndrome

Upper Crossed

Upper Crossed Syndrome is a postural pattern of tight and weak muscles creating a cross or X through the body. The tight muscles include the upper trapezius and levator scapula on the posterior side and shortened pectoralis major/minor on the anterior side of the body. The weak muscles are the cervical deep neck flexors on the anterior side and the middle and lower trapezius on the posterior side. This postural pattern creates dysfunction in the cervical spine, thoracic spine, and shoulders which can cause pain and functional limitations. The muscle imbalance associated with Upper Crossed Syndrome results in thoracic kyphosis, forward head, scapular winging, and protracted shoulders.

Thoracic Kyphosis

Thor-axe Curvy-spine

Thoracic Kyphosis is a forward curvature of the thoracic spine. Normal thoracic kyphosis ranges between 20-40 degrees. Thoracic Kyphosis greater than 45 degrees is abnormal. This abnormal increase in kyphosis occurs as a result of Upper Crossed Syndrome and can cause pain and dysfunction.

Forward Head

Forward Head

Forward head is a postural condition in which the head sits anterior to the shoulders. This condition occurs in upper crossed syndrome as the middle and lower trapezius are inhibited, the shoulders protract and round, and the head comes forward. Forward Head results in pain, headaches, and dysfunction of the cervical, thoracic, and TMJ.

Scapular Winging

Scapula Wings

Scapular winging is a condition in which the medial border of the scapula tilts and protrudes posteriorly like wings. This condition occurs in Upper Crossed Syndrome as the scapula elevates, protracts, and abducts due to muscle imbalance.

Protracted Shoulders

Protractor Shoulders

Protracted Shoulders are a postural symptom of Upper Crossed Syndrome. This symptom occurs as the middle and lower trapezius lengthen and the pectoralis major and minor shorten, causing the scapulae to abduct away from the spine. Protracted shoulders lead to pain and dysfunction in the cervical spine, thoracic spine, and shoulders.

Lower Crossed Syndrome

Lower Crossed Syndrome

Lower Crossed

Lower Crossed Syndrome is a postural pattern of tight and weak muscles creating a cross or X through the body. In Lower Crossed Syndrome, the hip flexors on the anterior side of the body, lumbar extensors, and hamstrings on the posterior side of the body are tight. The weak muscles in Lower Crossed Syndrome are the deep abdominal muscles on the anterior side of the body and the gluteus maximus on the posterior side of the body. The muscle imbalance associated with Lower Crossed Syndrome results in lumbar lordosis, anterior pelvic tilt, and increased hip flexion.

Lumbar Lordosis

Lumber Swayback

Lumbar Lordosis is the natural inward curve of the lumbar spine. Normal Lumbar Lordosis is 40-60 degrees. As a result of Lower Crossed Syndrome, hyperlordosis, or excessive Lumbar Lordosis, is seen due to the tight hip flexors and tight lumbar extensors.

Anterior Pelvic Tilt

Ant-eater Pelvis Tilt

An Anterior Pelvic Tilt is a tilt of a neutral pelvis in the anterior direction. For functional mobility, our bodies must be able to move in and out of anterior and posterior pelvic tilts. In Lower Crossed Syndrome, a person is stuck in an anterior pelvic tilt due to tight hip flexors, tight lumbar extensors, and weak abdominals and glutes.

Increased Hip Flexion

Up-arrow Hip Flexing

In Lower Crossed Syndrome, hip flexion is increased due to tight hip flexors and an anterior pelvic tilt. Patients with increased hip flexion in Lower Crossed Syndrome would have difficulty reaching full hip extension.

Posture

Postural Muscles

Posture Muscle-man

Postural Muscles are muscles that work against gravity to keep our body upright. They are muscles that tend to be tight and short and also atrophy at a slow pace. Postural Muscles associated with Upper Cross Syndrome include the upper trapezius, levator scapulae, and pectoralis muscles.

Phasic Muscles

Phaser Muscle-man

Phasic Muscles are muscles that work when our brains tell them to, or on demand. Phasic muscles tend to be long and weak and atrophy at a quicker rate than postural muscles. Phasic muscles in lower crossed syndrome include the abdominals and the glutes.

Scoliosis

Curved-spine and Skull

Scoliosis is a postural deformity resulting in a lateral curvature of the spine coupled with a rotation of the spine. In scoliosis, musculoskeletal crosses will be opposite left to right and front to back and will not fit the traditional cross syndrome due to the lateral and rotational component of the deformity.