

# Overview on Upper/Lower Crossed and Layer Syndrome

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## Editorial

Crossed syndromes is caused by typical muscle imbalances, during which some muscles have a tendency to get shortened known as postural muscles, these muscles are hyperactive, hypertonic and their length in is getting shortened in relaxed condition. This shortening can also lead to weakening of muscles because muscles are phasic and are less active due to adaptation.

## Upper Crossed Syndrome

The shortening of the upper muscle fibers of the trapezius muscles and the levator scapulae muscles arises. It also leads to excessive burdening of the sternocleidomastoid muscles. Pectoral muscle most frequently gets shortened in this. Deep flexors of the head and neck including lower fixators of the shoulder blades are normally weakened. Along with the paravertebral muscles (alongside the spine) in the thoracic segments also weakens as well.

This muscle imbalance is followed by numerous changes in the static and motion stereotypes. It results into pushing the head forward and overloading the progress between the cervical and thoracic spine, cervical hyperlordosis is upheld by shortened upper fibres. Combination of all these problems leads to supposed “gothic shoulders” with height of the shoulder girdle, round back and adduction with rotated shoulder blade.

While the diagnosis of painful conditions of the shoulder joint, Changed position or displacement of the shoulder blade is very important. Due to the Adduction and rotation of the shoulder blade prompts steeper course of the axis of the shoulder socket, this overloads the muscles and the entire shoulder girdle.

## Remedies or Treatment

1. Adjust work space as per ergonomic principles
2. Including exercises in routine such as
  - a. Stretching (upper parts of trapezius muscles, levator scapulae muscles, postural muscles of cervical spine, pectoral muscles, and sternocleidomastoid muscles).
  - b. Strengthening (deep flexors of both head and neck along with lower fixators of the shoulder blades)
  - c. Training correct postural stereotype and motion stereotype of the head flexion

## Lower Crossed Syndrome

In this condition flexors of the hip joints are shortened alongside the erectors of the lower back. This condition creates a downfall and weakened action of the gluteal muscles. Inadequacy of the gluteal muscles is significant and it has a pivotal importance for the body body posture and stability of the pelvis. The weakened abdominal muscles have been viewed as one of the most well-known reasons for lumbar hyperlordosis. Development of hyperlordosis relies upon unevenness of the core system (m. transversus abdominis, diaphragm,

pelvic floor and muscles alongside spine). This imbalance results into static and dynamic changes. It can prompt flexion of the pelvis and hip joints and to the referenced lordosis in the lumbosacral fragments. Which is finally accompanied by variable pressure difference hip joints and lumbosacral portions? Other than the changed statics, the dynamic changes such as incorrect walking stereotype are more significant.

## Remedies or Treatment

1. Adjust work space as per ergonomic principles
2. Including exercises in routine such as
  - a. Stretching (flexors of the hip joints, erectors of the lumbar spine and quadratus lumborum muscle)
  - b. Strengthening core system, abdominal muscles, pelvic floor and gluteal muscles
  - c. Training correct postural stereotype - tilting the pelvis, walking

## Layer Syndrome

This condition is defined by changing layers of the shortened and weakened muscles. At the point when we take a look at the human body from below and from the back, the very first we notice the shortened flexors of the knees, weakened gluteal muscles, less created lower back erectors, over-burden thoracic erectors, weakened muscles between the shoulder bones and hypertrophic hardened upper fixators of the shoulder girdle. The majorly affected parts at front side of the body are lower portions of weakened abdominal muscles. Major role is played by feet dysfunctions. A healthy person has an ability to deal with losing balance by making use of toes. Wearing inappropriate shoes can weaken these muscles and in such case their role is then played by thigh muscles, gluteal muscles and muscles of the torso becomes hyperactive.

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