

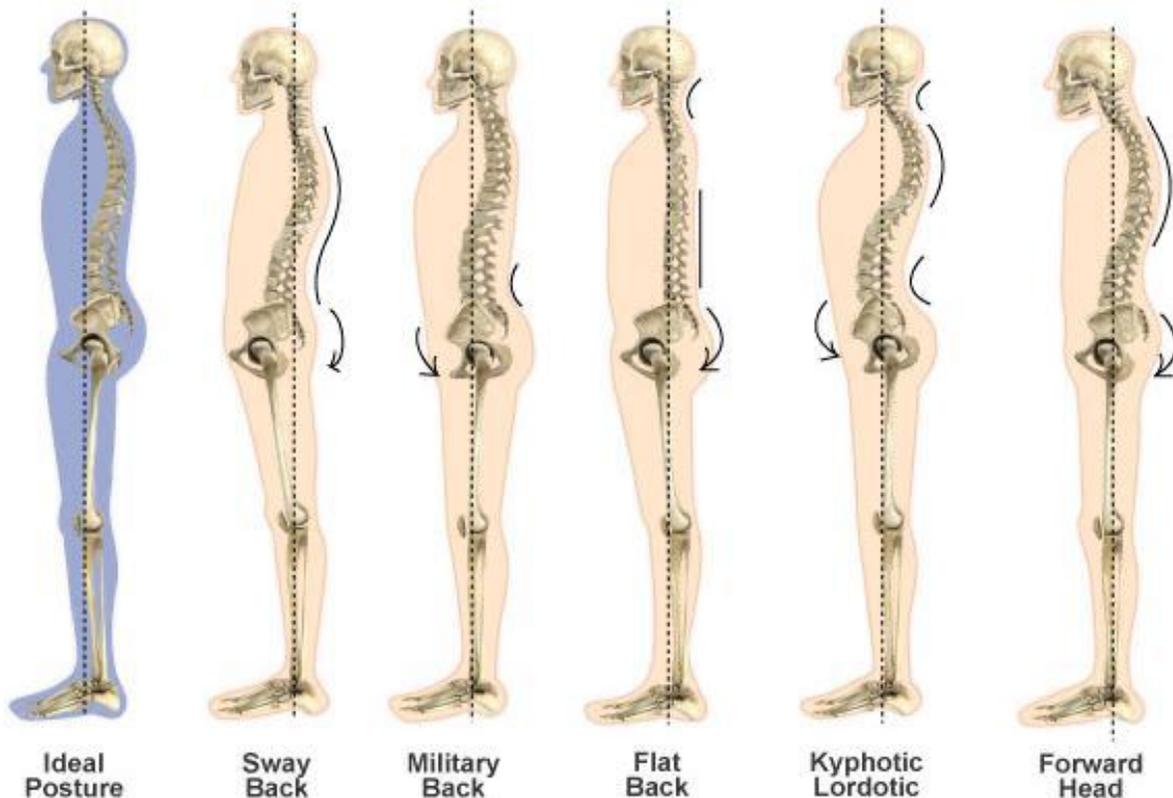
Posture Deviations in HSD/EDS

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Postural deviations may be a significant cause of pain in people with HSD/EDS. Hanging on joints can overstretch joints and muscles, increasing instability. There is no research to prove it but, in my experience, posture seems to contribute to at least half of all musculoskeletal pain in HSD/EDS. There is very little research evidence about the role of posture on pain, so this handout is based on clinical experience.

Ideal posture from the side is shown below, left. The most common deviations I see in HSD/EDS are Sway Back, Kyphotic-Lordotic, and Forward Head.

Common Postural Problems



<https://www.apto.com/blogs/news/common-posture-problems>

Common postural deviations in people with HSD/EDS. The “corrective exercises” are not specific instructions, and should only be attempted with appropriate knowledge or professional guidance.

Side view:

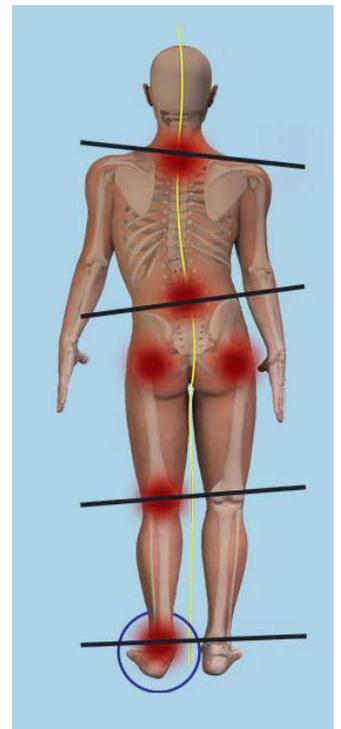
- Forward head
 - Symptoms: Neck or upper back pain, headaches, migraines, ringing in the ear, jaw pain, cervical instability (dizziness, tingling or twitching in the face, lump in throat, trouble swallowing, feeling that the head is too heavy to hold up or “bobble-head”).
 - Corrective exercises: Chin tucks. Easiest lying on your back < sitting/standing < quadruped.
- Excessive thoracic kyphosis (forward bend of upper back)
 - Symptoms: Neck or upper back pain, headaches, shoulder pain, difficulty breathing.
 - Corrective exercises: Upper back extension, pulling shoulders back, quadruped arm lifts.
- Forward shoulders, or shoulders rotated inward (palms facing backward)
 - Symptoms: Shoulder pain, shoulder (anterior) instability, shoulder impingement.

- Corrective exercises: Pulling shoulder (humeral head) back, rotating shoulders outward (palms forward by moving the shoulders and not the forearms). May need to stretch the pectorals.
- Excessive lumbar lordosis (arch in the low back)
 - Symptoms: Low back pain, muscle spasm, lumbar instability (catching, sharp pain in low back).
 - Corrective exercises: Posterior pelvic tilt (lying down or standing with back to wall), abdominal strengthening; may need to stretch tight low back muscles.
- Forward (anterior) or backward (posterior) pelvic tilt
 - Symptoms: Low back pain, lumbar instability, sacroiliac instability or pain.
 - Corrective exercises for forward pelvic tilt: posterior pelvic tilt (lying down or standing), abdominal and hamstring strengthening; may need to stretch tight hip flexors or quadriceps.
- Hyperextended hips (seen in swayback posture)
 - Symptoms: Hip pain, hip instability
 - Corrective exercises: body awareness. Gluteus maximus and abdominal strengthening.
- Hyperextended knees
 - Symptoms: Anterior (patellofemoral) knee pain, patellar instability/subluxation.
 - Corrective exercises: Body awareness training. General hip and leg strengthening.

Front/Back View

From the front/back, posture should be symmetric and the shoulders should not droop excessively.

- Sloping shoulders (note that it is common for the dominant shoulder to be lower than the non-dominant). Normally, the tip of the shoulder should be slightly lower than the angle of the neck. Problems often occur if the shoulder is sloped more than about 10°.
 - Symptoms: Shoulder instability/subluxations, shoulder pain, nerve problems in the arms/hands, including thoracic outlet, cubital tunnel, carpal tunnel, neck pain, headaches.
 - Corrective exercises: Shoulder shrugs, both to strengthen the upper trapezius and to increase muscle activity at rest. Body awareness, supporting arms when possible, using armrests on chairs, pillows, or by putting your hands in your pockets.
- Widespread shoulder blades (abducted scapulae)
 - Shoulder pain, upper back pain, neck pain.
 - Corrective exercises: Shoulder blade squeezes, Brugger exercise, quadruped arm lifts.
- Side-tipped pelvis (one side higher than the other); also called Trendelenburg stance.
 - Symptoms: lateral hip pain, sciatic pain, low back pain or instability
 - Corrective exercises: awareness training, strengthening gluteus medius, minimus, maximus.
- Knock knees (genu valgus) and bow-legs (genu varus)
 - Symptoms: knee pain and instability, hip pain and instability.
 - Correction: exercises generally cannot fix this; knee braces may be required.
- Foot pronation (flat foot) shown on the left side of this picture
 - Symptoms: anterior knee pain, hip pain, sciatica, low back pain, neck pain. See picture to understand how flat foot can affect the whole body.
 - Corrective exercises: toe curls, foot curls, hip external rotation strengthening. Exercise, alone, often cannot fix flat feet, so orthotics are helpful for many people.



Muscle Tightness and Weakness in Common Postural Deviations

Postural deviations are often associated with patterns of muscle tightness or weakness. Here are some of the common patterns seen from the side.

Swayback Posture

Head:
Forward

Neck:
Slightly extended

Scapulae:
Winged

Chest/Thorax:
Kyphotic (increased flexion)

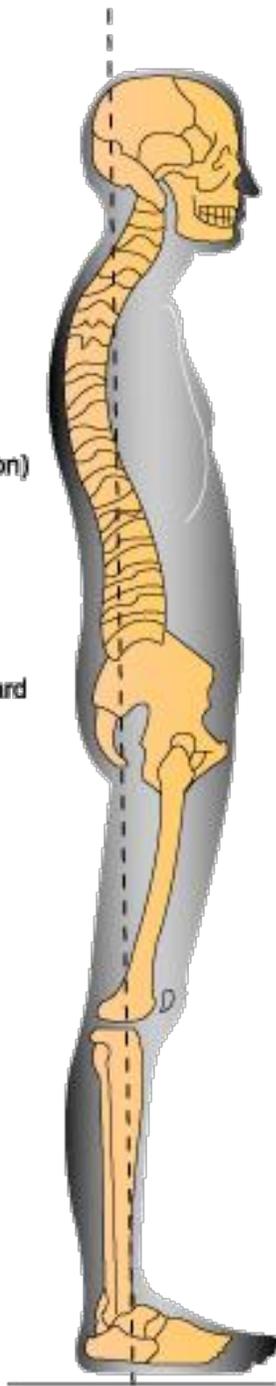
Lower Back:
Flattened.

Pelvis:
Posterior tilt/tilted backward

Hips:
Hyperextended with
forward positioning

Knees:
Hyperextended

Feet:
Neutral

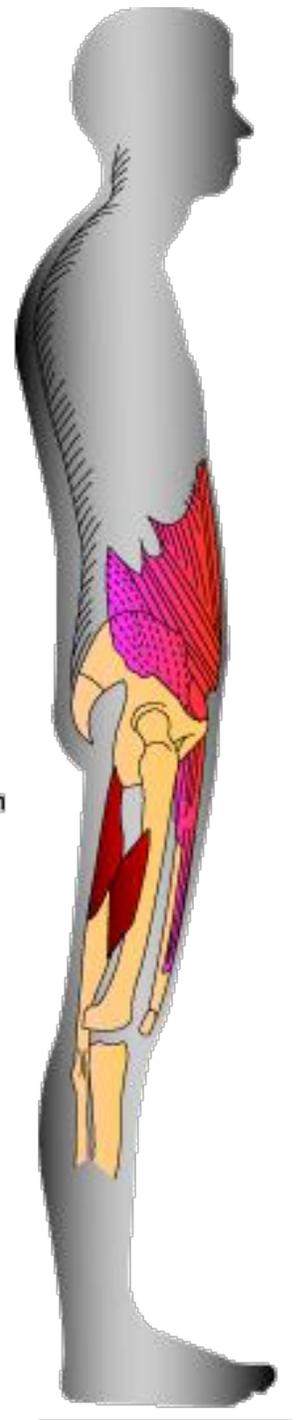


Lengthened and Weak:

- Hip flexors
- External obliques
- Upper back extensors
- Neck flexors

Shortened and Tight:

- Hamstrings
- Internal oblique
- Low back muscles
 - Erector spinae
 - Quadratus lumborum



Lower Crossed Syndrome

Lower crossed syndrome is common in kyphotic-lordotic posture. There is a common pattern of muscle tightness and weakness.

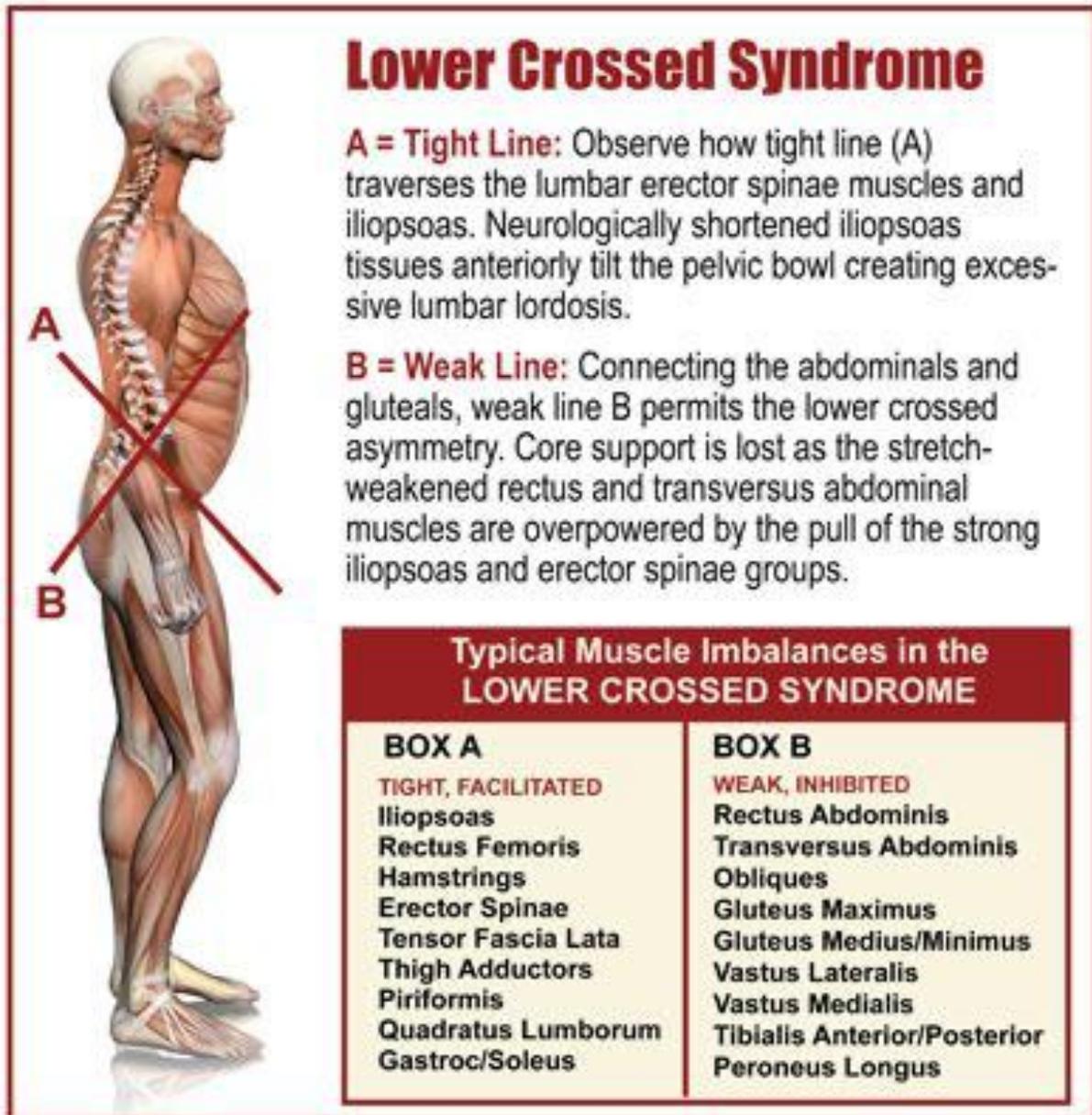
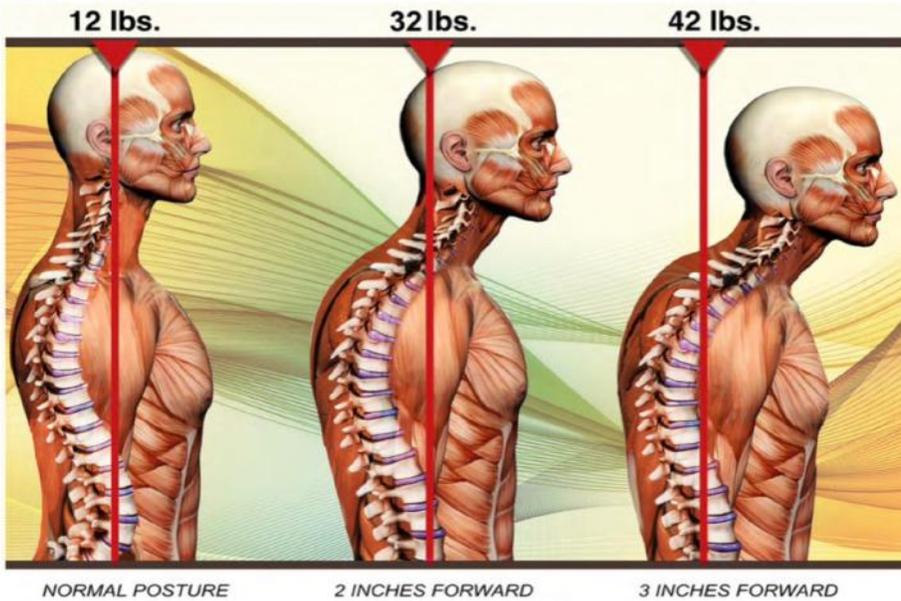


Fig. 3

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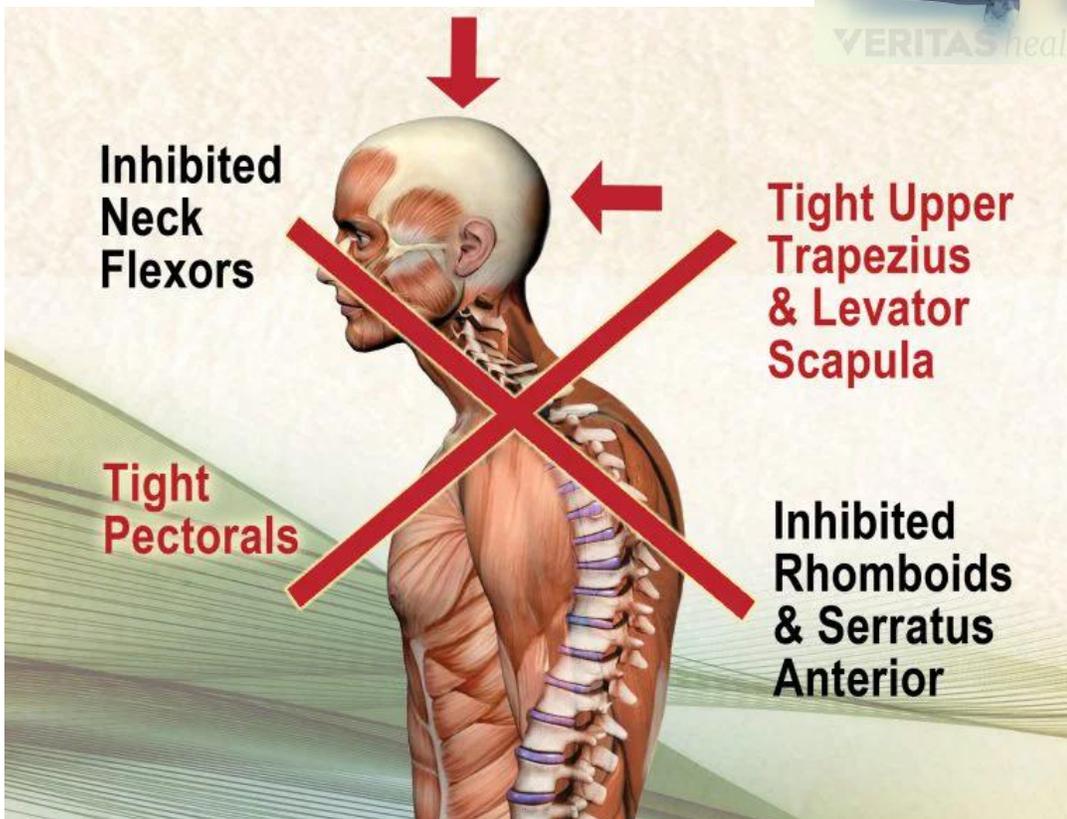
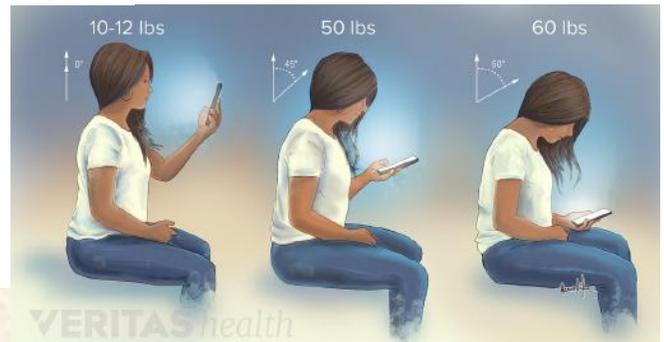
Forward Head and Upper Crossed Syndrome



Forward Head places a lot of stress on the neck joints, muscles, nerves and can put pressure on the spinal cord and brainstem. Every inch forward increases the effective weight of the head by 10 pounds.

(picture www.erikdalton.com)

Text Neck is another common posture when texting on the phone. It places similar stress on the neck.

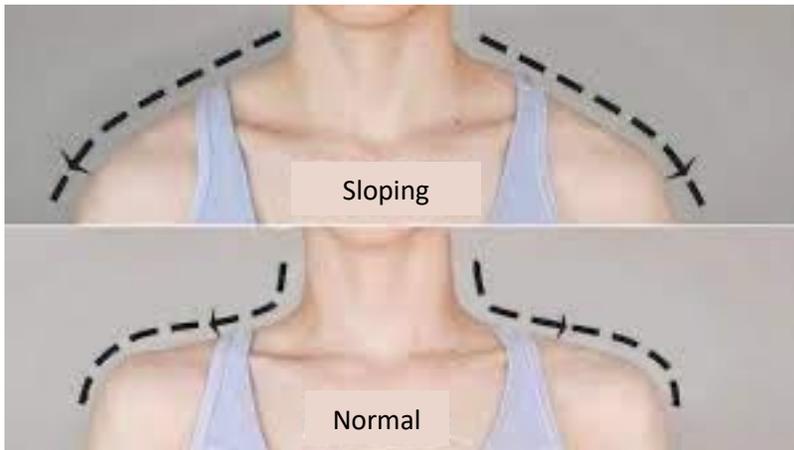


Upper Crossed Syndrome is a common pattern of muscle tightness and weakness.

Common Postural Faults from the Front/Back

Postural deviations are often associated with patterns of muscle tightness or weakness. From the front/back, the body should generally be symmetric, though it is normal for the dominant shoulder to be a bit lower than the non-dominant shoulder. Here are some of the common patterns seen from the front/back.

Sloped Shoulders



The shoulders should be slightly lower than the angle of the neck. The bottom picture shows normal alignment. The top picture shows sloped shoulders, also called drooping shoulders, depressed or downwardly rotated shoulder blades. Sloped shoulders may occur if the shoulder blades are too low (depressed), or if they droop down on the outside (downwardly rotated).



You can identify **downwardly rotated shoulder blades** if the inside border of the shoulder blade is tipped down rather than vertical (bottom picture)

Winging Scapula are shoulder blades that poke out from the back, like angel wings. There are two types based on which muscles are weak. 'Medial winging' means the shoulder blades have moved in towards the midline of the back, and indicate weak serratus anterior muscles. 'Lateral winging' means that the shoulder blades have moved away from the midline of the back, and indicate weak trapezius muscles. This picture shows lateral winging. Winging scapulae means that your muscles are not controlling the shoulder blade properly, either from weakness or poor motor control. Unstable shoulder blades will cause shoulder problems, so winging scapulae should be addressed.



Asymmetries from the Front/Back

This picture shows a common pattern of asymmetry, with tight muscles shown as dark, and weak muscles light.



Head: Erect, neither tilted nor rotated.

Cervical spine: Straight.

Shoulder: Elevated and adducted.

Shoulders Joints: Medially rotated, as indicated by position of the hands facing posteriorly.

Scapulae: Adducted and elevated.

Thoracic and Lumbar Spines: Slight thoracolumbar curve convex toward the right.

Pelvis: Lateral tilt, higher on the left.

Hip Joints: Left adducted and slightly medially rotated, right abducted.

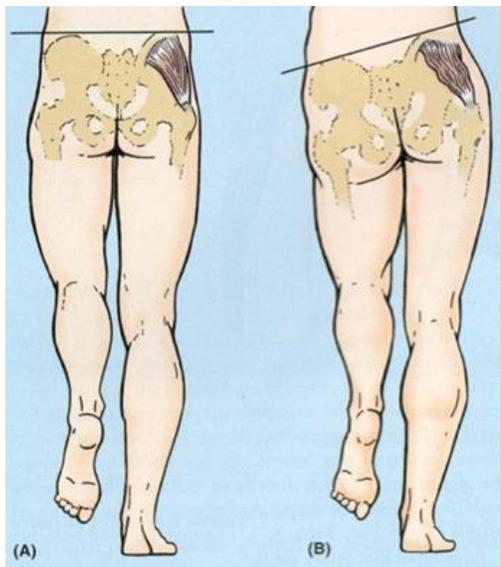
Lower Extremities: Straight, neither bowed nor knock-kneed.

Feet: Slightly pronated.

Elongated and Weak: Right lateral trunk muscles, left hip abductors (especially posterior gluteus medius), right hip adductors, right tibialis posterior, right flexor hallucis longus, right flexor digitorum longus, left peroneus longus and brevis.

Short and Strong: Left lateral trunk muscles, right hip abductors, left hip adductors, left tibialis posterior, left flexor hallucis longus, left flexor digitorum longus, right peroneus longus and brevis. With the elevation and adduction of the scapulae, the rhomboids are in a shortened position.

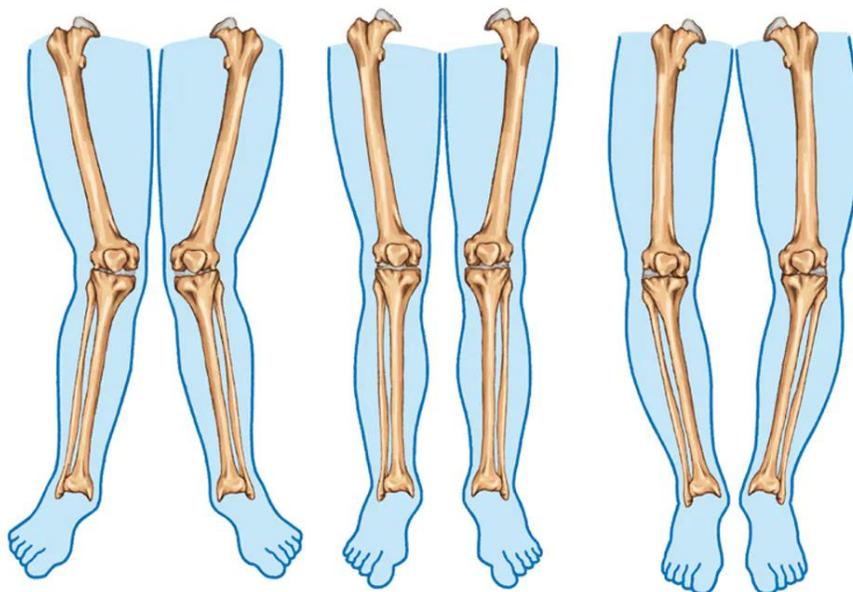
Trendelenburg Stance



Although this lateral tilt of the pelvis is more dramatic when walking or standing on one leg, some people have a lateral tilt even when standing still. It often means the hip abductors (gluteus medius, minimus, and maximus) are weak or not activating properly.

Knock Knees (Genu Valgus)

Knock knees are common in HSD because of loose ligaments. There are no muscles that can prevent this alignment. Severe knock knees should be managed with bracing. Bracing can improve function of not only the knees, but also the ankles and hips by improving their alignment.

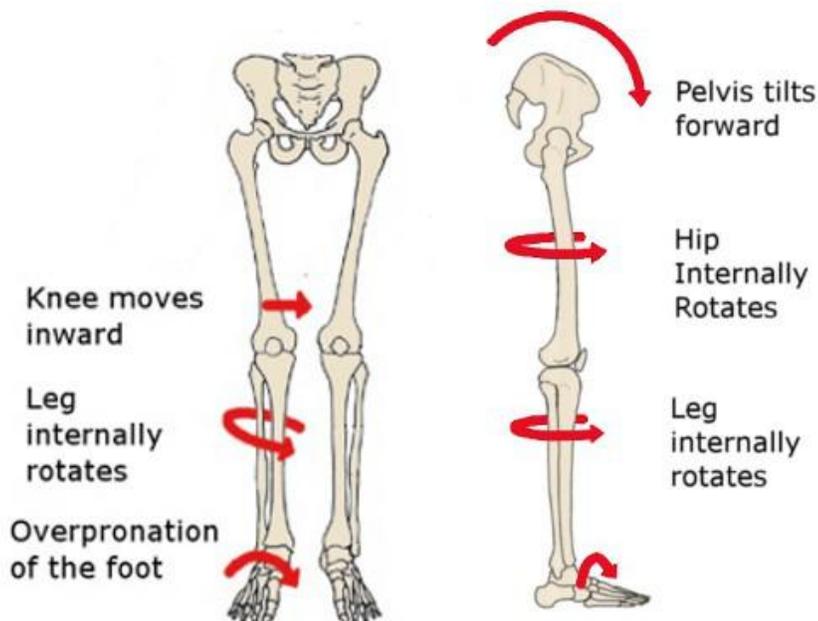


Knock Knees (valgus)

Normal

Bow Legs (varus)

Flat Feet (Over-Pronation)



Flat feet are caused by too much pronation of the foot and ankle. This is often due to loose ligaments, but can be aggravated by weak muscles in the foot and hip. Pronation causes the leg to rotate inward, which is why hip weakness can aggravate the problem. Flat feet often cause problems in the knees and hips, but can affect the body all the way up to the neck and jaw.