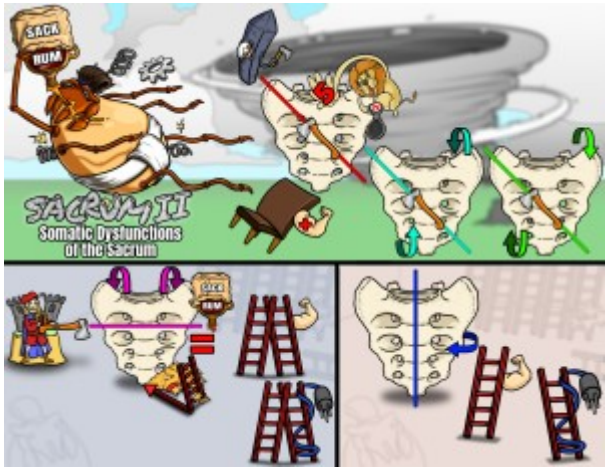
Sacrum II: Somatic Dysfunctions of the Sacrum

Sacral dysfunctions fall into one of three categories: torsions, bilateral and unilateral. Torsions occur on an oblique axis and are either backward or forward. In a sacral torsion, a neutral L5 will sidebend towards the axis. The seated flexion test will be positive opposite the axis. Forward torsions are torsions in which the axis and direction of rotation are the same. When the rotation happens on the opposite side of the axis the dysfunction is classified as a backwards torsion. Backwards torsions rotate opposite to the axis. Bilateral dysfunctions are dysfunctions in which the left and right are equally affected. These dysfunctions occur about the middle transverse axis. The ILAs and the sulci will be equal. Bilateral dysfunctions can be flexed or extended, and they will always have symmetry. The last category of dysfunction are the unilateral dysfunctions. They are typically ipsilateral. They can be flexed or extended on each side. If the unilateral dysfunction is flexed the affected sulci will feel anterior and if the dysfunction is extended the affected side will feel posterior.



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Torsions

Oblique Axis

Obelisk Axes

The oblique axis is a diagonal axis that runs from the most superolateral aspect of the sacrum to the inferolateral aspect of the opposite side.The oblique axis is named left or right after the side that the superior part of the axis is on. This oblique axis is the axis in which torsions are engaged on. Motion that occurs during walking is around this axis. When weight is shifted from one side to the other the oblique axes switch from left to right and back repeatedly. This motion is called dynamic motion. The axis that is engaged is on the side in which the person is bearing weight

Neutral L5 Sidebending Toward Axis

Neutral (L) Lion (5) Hand Sidebending Towards Axe

The somatic dysfunctions of L5 and the sacrum are related. The sacrum will rotate the opposite direction of L5, and L5 will be sidebended to the same direction as the sacral axis.

Seated Flexion is Positive Opposite the Axis

Seat Flexing is Positive Opposite the Axe

A seated flexion test determines the side of dysfunction if positive on one side. If the somatic dysfunction is a torsion, the seated flexion test is found on the opposite side of the oblique axis. In torsions, the sulci and the ILA on the same side will both be anterior or posterior when compared to the same anatomic structures on the other side.

Forward Torsions Rotate Same as Axis

Forward Twists Rotate Same as Axe

In forward torsions, the sacrum rotation is on the same side as the axis. There are two dysfunctions in this category, left on left and right on right. L5 is neutral in forward torsions.

Backward Torsions Rotate Opposite to Axis

Backward Twists Rotate Opposite to Axe

In backward torsions, the sacrum rotation is on the opposite side as the axis. There are two dysfunctions in this category, left on right and right on left. L5 is non-neutral (flexed or extended) in backward torsions. For example, a left on right dysfunction will have a + seated flexion test on the left and L5 will be flexed or extended.

Bilateral Dysfunctions

Middle Transverse Axis

Middle-ages Transverse Axe

In bilateral dysfunctions, the sacral base moves anterior (in flexion) or posterior (in extension). These dysfunctions occur about the middle transverse axis. The middle transverse is also the axis in which postural motion takes place. If someone bends forward, the base of the sacrum moves anteriorly around this axis.

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ILAs and Sulci are Equal

In-fur Ladder Angles and Sack-rum Groove are Equal

Since the dysfunction is bilateral and both sides are equally affected the anatomical landmarks are symmetrical. This includes the ILAs and the sulci.

Bilateral Flexion

Bi-ladder Flexing

A bilateral sacral flexion dysfunction will have a negative seated flexion test and a negative spring and sphinx test. The ILAs and sulci are equal bilaterally, and the sacral base is rotated anterior around the middle transverse axis. This dysfunction is associated with an increased lumbar curve. Bilateral sacral dysfunction is the most common dysfunction of the sacrum in patients who have recently given birth.

Bilateral Extension

Bi-ladder Extension-cord

A bilateral sacral flexion dysfunction will have a negative seated flexion test, a positive spring and a negative sphinx test. The ILAs and sulci are equal bilaterally, and the sacral base is rotated posterior around the middle transverse axis. This dysfunction is associated with a decreased lumbar curve.

Unilateral Dysfunctions

Ipsilateral

Same-sided

In unilateral dysfunctions, the sacrum is shifted either anteriorly or posteriorly on a transverse axis. The sacrum can flex or extend on the right or left side. This leaves a total of 4 sacral dysfunctions in the unilateral category: left unilateral flexion, right unilateral flexion, left unilateral extension and right unilateral flexion.

Unilateral Flexion

Uni-ladder Flexing

In this unilateral dysfunction, the side affected will have an anterior, deep sulci and an inferior and posterior ILA. Additionally, the seated flexion test will be positive on the side of dysfunction, and the sphinx test will be positive. For example, a right unilateral flexion will have a deep sulci on the right, a shallow sulci on the left, a posterior and inferior ILA on the right and an anterior, superior ILA on the left.

Unilateral Extension

Uni-ladder Extension-cord

In this unilateral dysfunction, the side affected will have an posterior sulci and an ILA that is superior and anterior. The seated flexion test will be positive on the side of dysfunction, and the spring test will be positive as well. For example, a left unilateral extension will have a deep sulci on the right, a shallow sulci on the left, a shallow, posterior ILA on the right and an anterior, deep ILA on the left.

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