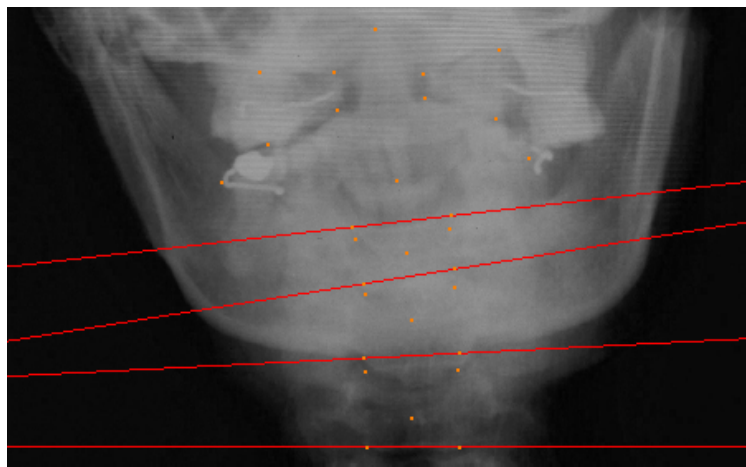
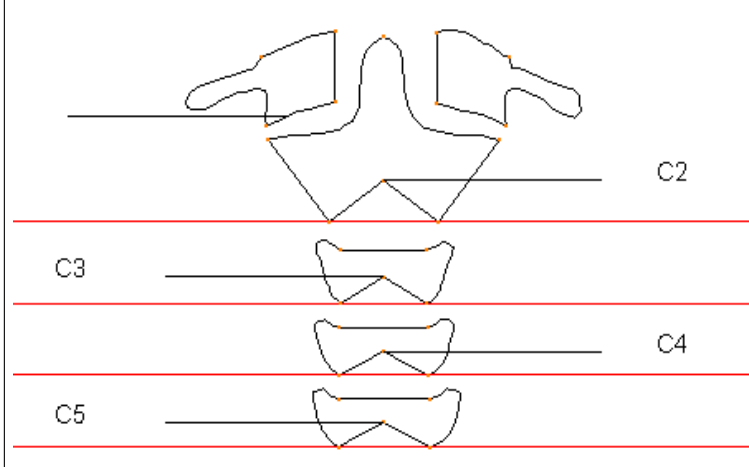


Doe, John 01/16/07
A/P Neut W/B [C5-SK]



Base Lines

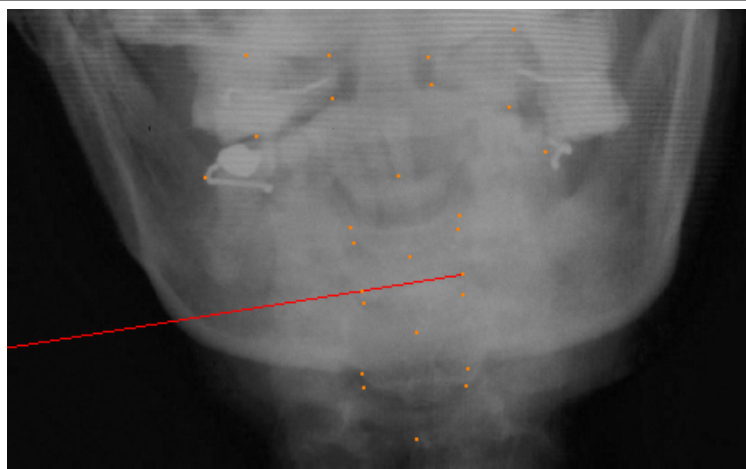
Std A/P
A/P Neut W/B [C5-SK]



Base Lines

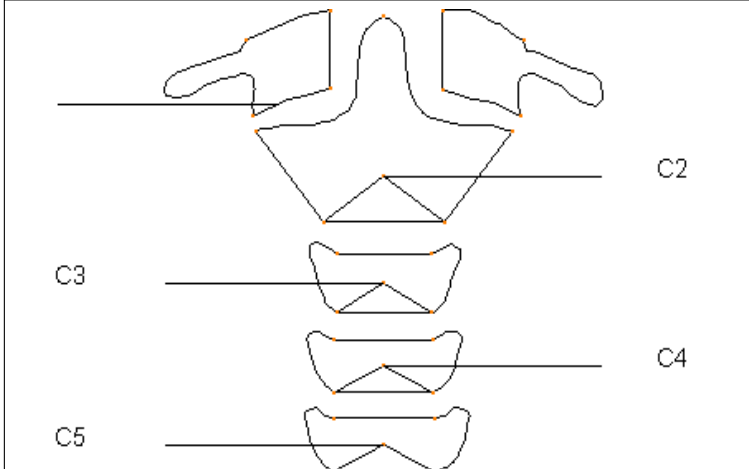
The A/P baselines are drawn through the inferior endplates of the vertebrae in the anterior to posterior x-ray views. In the normal spine, the baselines should be parallel. Convergence of the baselines is abnormal. Some possible causes are: Short leg syndrome (anisomelia), disc involvement, spinal fractures, muscle

Doe, John 01/16/07
A/P Neut W/B [C5-SK]



Cobb's Angle C5/C3 9.1° (LT.)

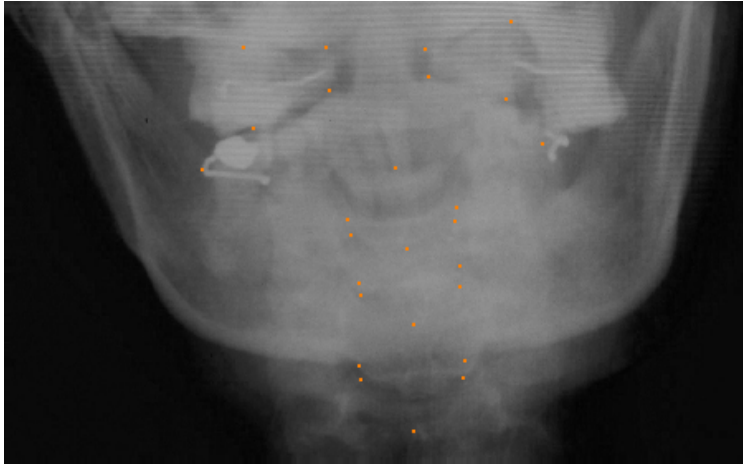
Std A/P
A/P Neut W/B [C5-SK]



Cobb's Angle 0°

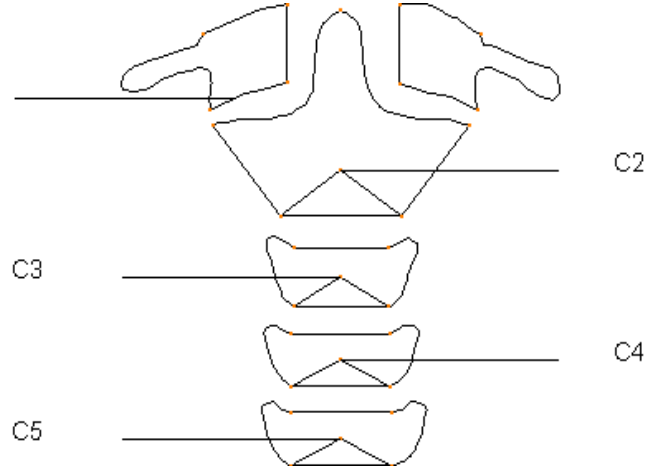
The Cobb-Lippman method for determining scoliosis was introduced by Lippman in 1935 and was made popular by Cobb. A line is drawn through the superior border of the cephalad end vertebra while another line is drawn through the inferior border of the caudad end vertebra. The angle is then determined.

Doe, John 01/16/07
A/P Neut W/B [C5-SK]



Stress Lines:

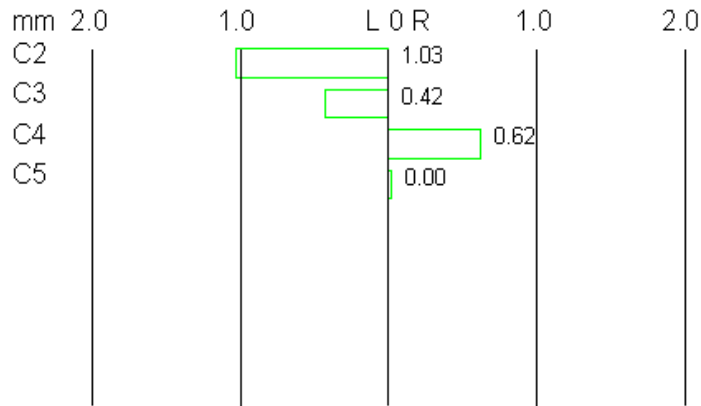
Std A/P
A/P Neut W/B [C5-SK]



Stress Lines:

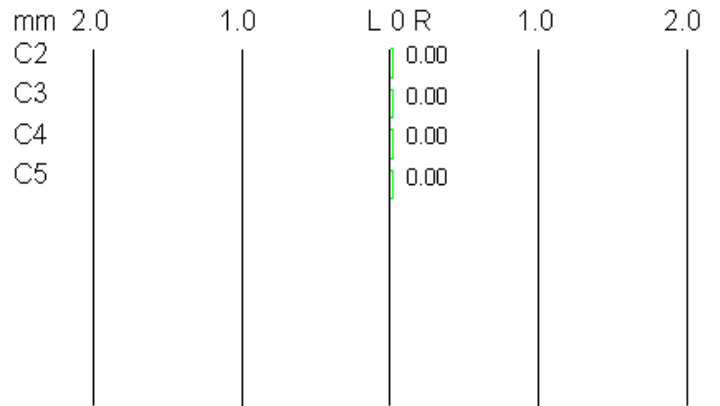
Stress lines are drawn off the posterior bodies of L1 and L5. The normal angle is approximately 51 degrees with the intersection of these lines at the L3 disc. Stress lines are drawn off the anterior bodies of T1 and T12. The normal angle is approximately 65 degrees with the intersection of these lines at the posterior

Doe, John 01/16/07
A/P Neut W/B [C5-SK]



Vertebral Body Rotation

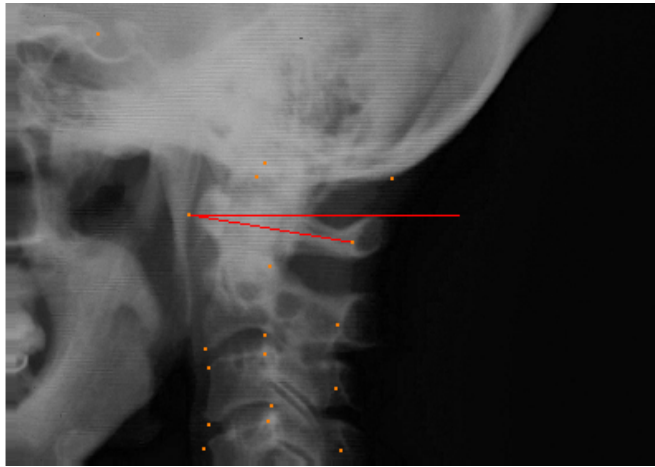
Std A/P
A/P Neut W/B [C5-SK]



Vertebral Body Rotation

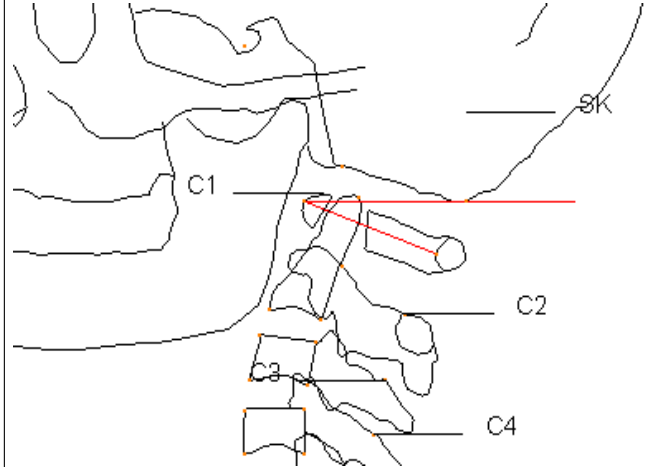
VERTEBRAL BODY ROTATION (VBR) is a measure of the rotation of the body of a vertebra from a true center line position when viewed posteriorly. VBR usually occurs to the convex side of a curve. VBR causes increased stress to the spinal system and is an accurate measure for determining abnormal

Doe, John 01/16/07
Lat Neut W/B [C6-SK]



Atlas Angle: 9.61° S

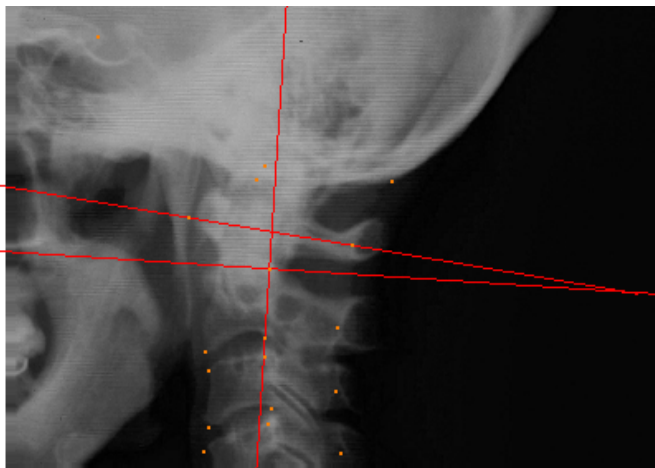
Std Lat
Lat Neut W/B [C6-SK]



Atlas Angle: 21.67° S

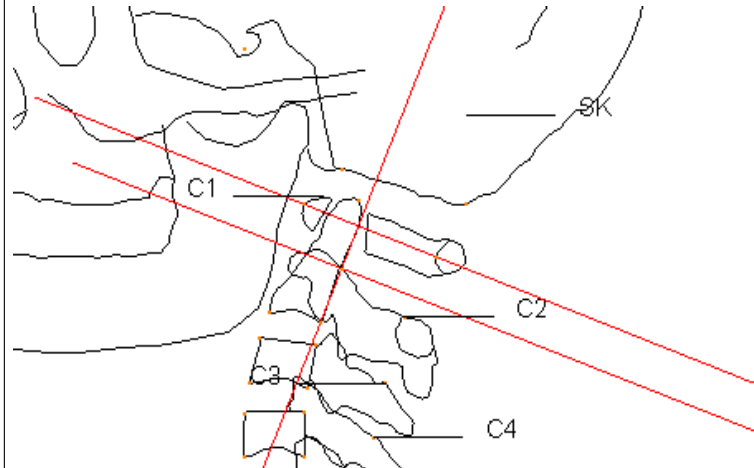
The Atlas Angle is a very significant and important measurement in determining the stability of the most moveable segment in the spine. The angle is constructed by comparing two lines. The Atlas Plane Line is compared to true horizontal. Any increase or decrease of this angle creates abnormal shearing

Doe, John 01/16/07
Lat Neut W/B [C6-SK]



Atlas/Axis Angle: 5.90° A

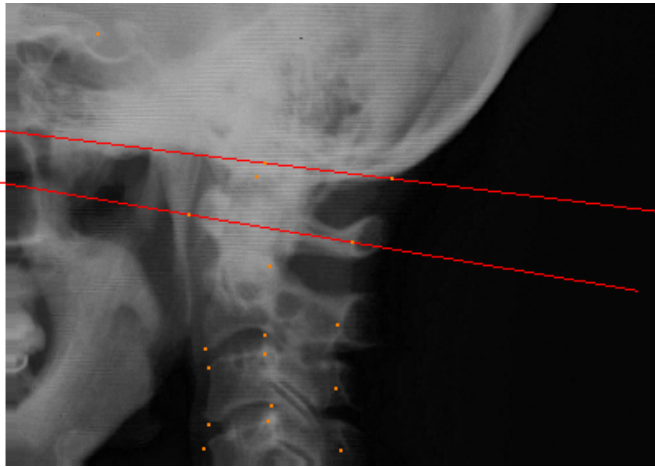
Std Lat
Lat Neut W/B [C6-SK]



Atlas/Axis Angle: 0.19° A

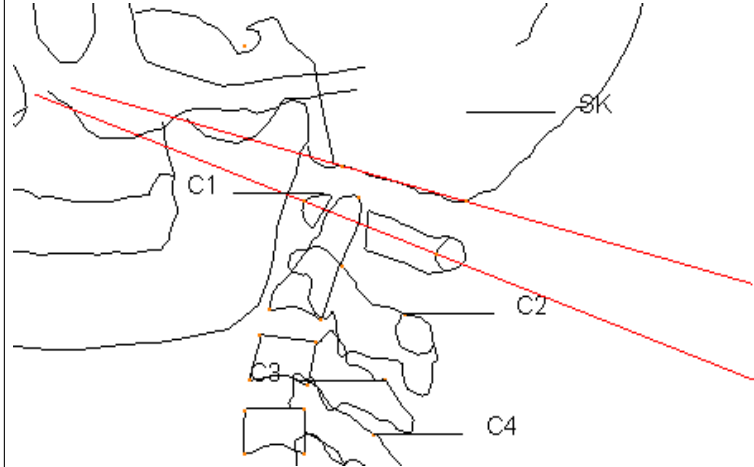
The Atlas/Axis angle represents the angular relationship of C1 to C2. The atlas plane line is compared to a perpendicular line drawn from the posterior axis body line. The normal relationship is 1 to 2 degrees with the angle opening to the anterior. A diminished C1/C2 angle would be suggestive of C1 fixed in

Doe, John 01/16/07
Lat Neut W/B [C6-SK]



Atlas Skull Angle: 2.59°

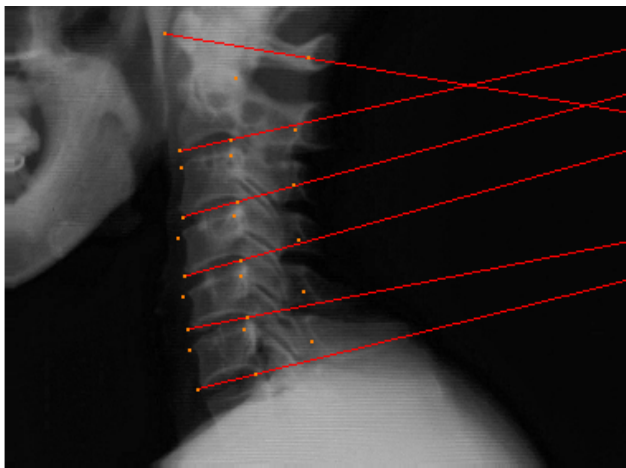
Std Lat
Lat Neut W/B [C6-SK]



Atlas Skull Angle: 5.61°

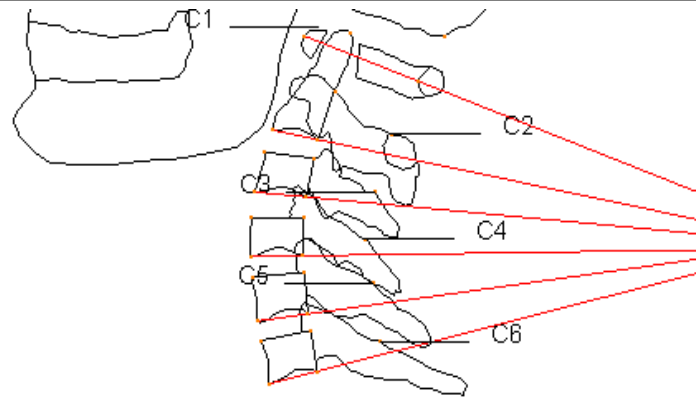
The Atlas/Skull Angle is an angular comparison of the plane line of C1 to the plane line of the base of the skull at the level of the foramen magnum. In the healthy spine, the angle is divergent to the posterior. An increase in the normal angle would indicate a flexion related subluxation. A reversal of the angle

Doe, John 01/16/07
Lat Neut W/B [C6-SK]



Base Lines

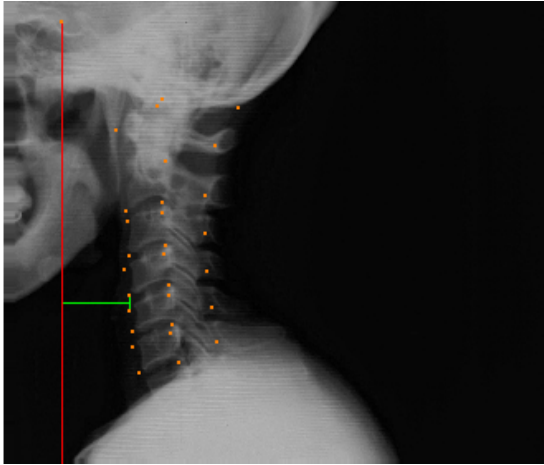
Std Lat
Lat Neut W/B [C6-SK]



Base Lines

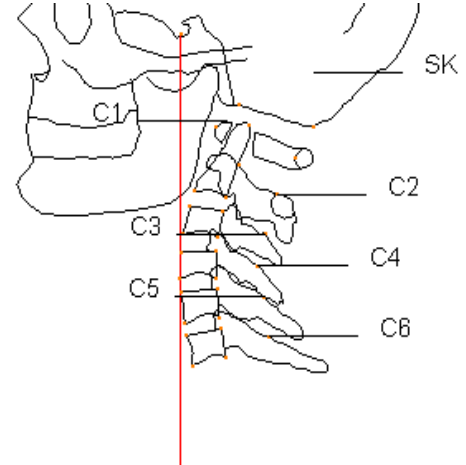
The lateral base lines are drawn from the inferior epiphyseal plates of each vertebra. The lines should converge on the posterior side of the lateral spine view at a central point. This is a qualitative analysis used to assist the physician in determining fixed flexion or fixed extension of vertebra(e). When a base line

Doe, John 01/16/07
Lat Neut W/B [C6-SK]



Centre of Gravity 29.46mm P

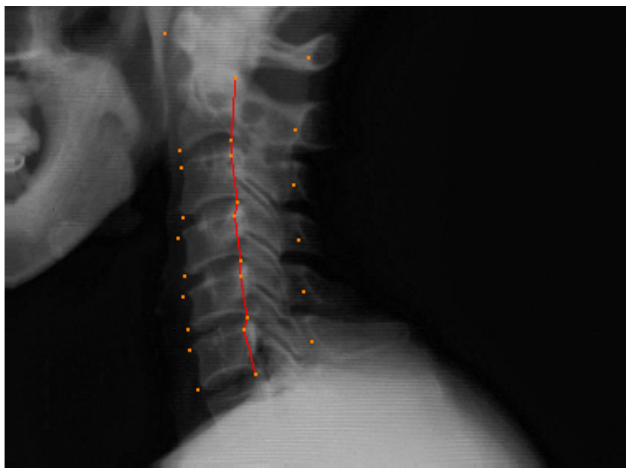
Std Lat
Lat Neut W/B [C6-SK]



Centre of Gravity 0.00mm A

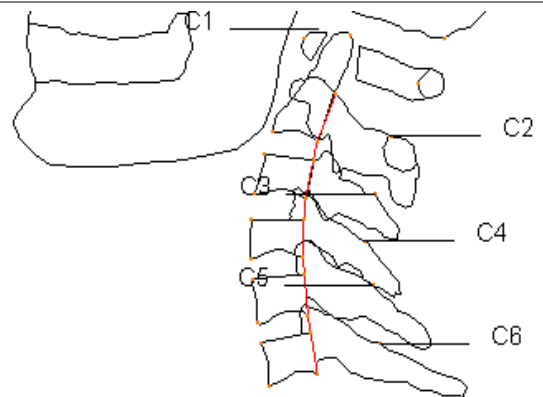
This analysis is done as follows. In the lateral cervical view, locate the anterior lip of the Sella Turcica. From there drop a vertical line. This line should intersect at C4 and C5 disk space at the center point. If it does not, take the horizontal distance and measure it. If the line is to the front, the value is positive.

Doe, John 01/16/07
Lat Neut W/B [C6-SK]



George's Line: C2/C3, C3/C4, C4/C5 and C5/C6

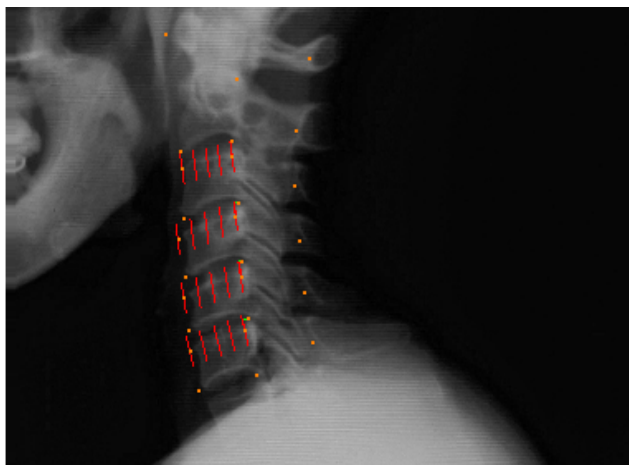
Std Lat
Lat Neut W/B [C6-SK]



George's Line:

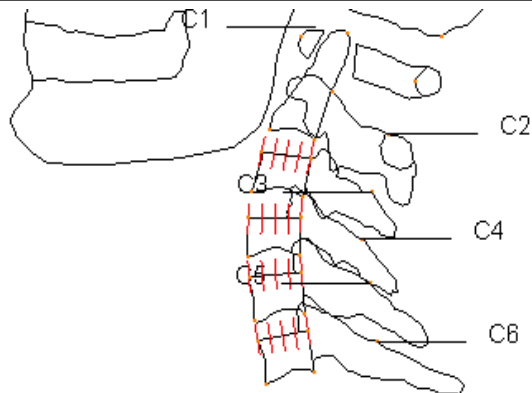
George's Line is also known as the posterior vertebral alignment line and the posterior body line. George's line is a measure of the integrity of the posterior vertebral body alignment. The key landmark is the alignment of one vertebra to a superior and inferior vertebra. Normally, there is a smooth vertical

Doe, John 01/16/07
Lat Neut W/B [C6-SK]



Cervical Spondylolisthesis: Retrolisthesis at C3, C5.

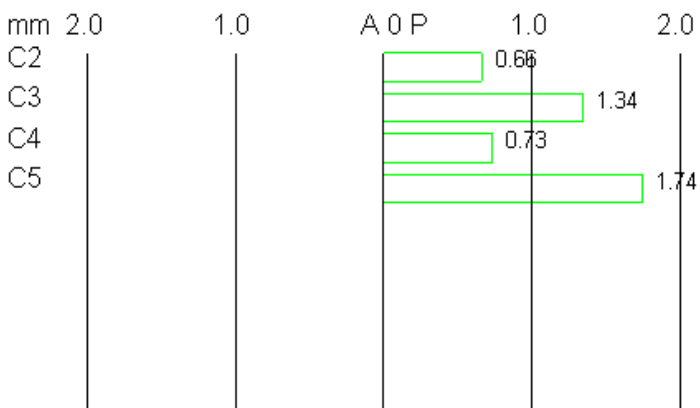
Std Lat
Lat Neut W/B [C6-SK]



Spondylolisthesis (None)

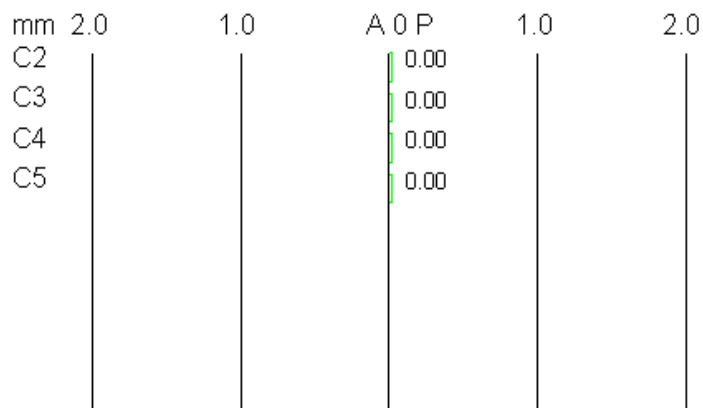
Spondylolisthesis is a displacement of a vertebral body in relation to the segment immediately below. The posterior inferior corner of the L5 vertebra is graded for anterior slippage which indicates ligamentous instability and/or fracture. 1-25% slippage is a grade one, 26-50% slippage is a grade two, and 51-75%

Doe, John 01/16/07
Lat Neut W/B [C6-SK]



Vertebral Offsets

Std Lat
Lat Neut W/B [C6-SK]



Vertebral Offsets

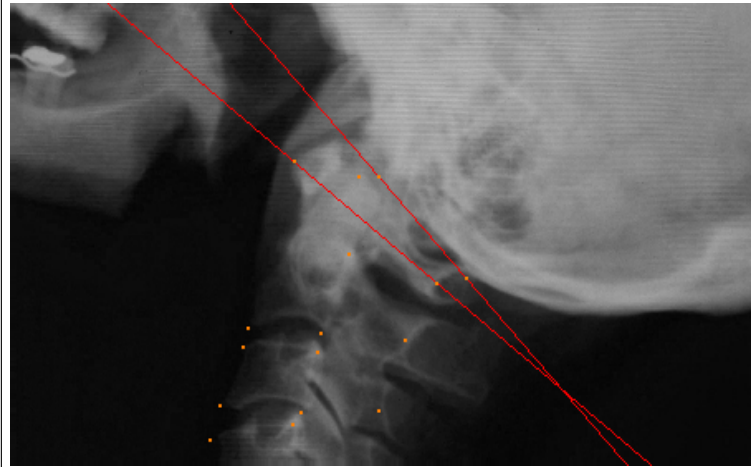
Translatory displacement is measured from the posterior inferior corner of the body of the superior vertebra to the posterior superior corner of the inferior vertebra. Measurement of 1-3mm is considered to be subluxation. A displacement of more than 3.5mm in the cervical spine, 2.5mm in the thoracic spine and

Doe, John 01/16/07
 Lat Flex W/B [C5-SK]



Atlas Skull Angle: 4.63°

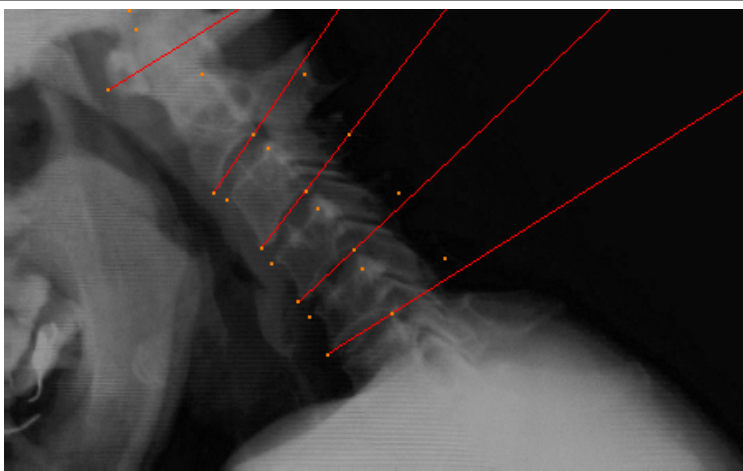
Doe, John 01/16/07
 Lat Ext W/B [C5-SK]



Atlas Skull Angle: 8.94°

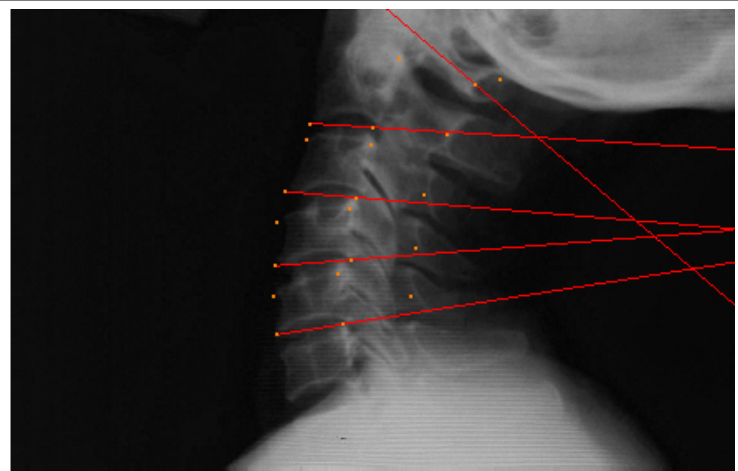
The Atlas/Skull Angle is an angular comparison of the plane line of C1 to the plane line of the base of the skull at the level of the foramen magnum. In the healthy spine, the angle is divergent to the posterior. An increase in the normal angle would indicate a flexion related subluxation. A reversal of the angle

Doe, John 01/16/07
 Lat Flex W/B [C5-SK]



Base Lines

Doe, John 01/16/07
 Lat Ext W/B [C5-SK]



Base Lines

The lateral base lines are drawn from the inferior epiphyseal plates of each vertebra. The lines should converge on the posterior side of the lateral spine view at a central point. This is a qualitative analysis used to assist the physician in determining fixed flexion or fixed extension of vertebra(e). When a base line

Doe, John 01/16/07
Lat Flex/Ext W/B [C5-SK]

	Patient (°)	Established Abnormal (°)	Established Ratable Threshold (°)
C2	3.43° I	7 - 11	11
C3	9.09° I	7 - 11	11
C4	10.90° I	7 - 11	11

Motion Segment Integrity, Angular
I - Inferior, S - Superior

A motion segment of the spine is defined as two adjacent vertebrae, an intercalated disk, and the vertebral facet joint. Loss of motion segment or structural integrity is defined as abnormal back-and-forth motion (translation) or abnormal angular motion of a motion segment with respect to an adjacent motion segment. The angular loss of integrity is defined as a difference in the angular motion of two adjacent motion segments greater than 11 degrees at C2/C3, C3/C4, C4/C5/ C5/C6, C6/C7, T1/T2, T2/T3, T3/T4, T4/T5, T5/T6, T6/T7, T7/T8, T8/T9, T9/T10, T10/T11, T11/T12, greater than 15 degrees at L1/L2, L2/L3, L3/L4 and greater than 20 degrees at L4/L5 in response to flexion and extension. Loss of integrity of the lumbosacral joint is defined as an angular motion between S1/L5 that is greater than 25 degrees greater than motion at L4/L5 level at 20 degrees..(Ref: Guides to the Evaluation of Permanent Impairment, Fifth Edition

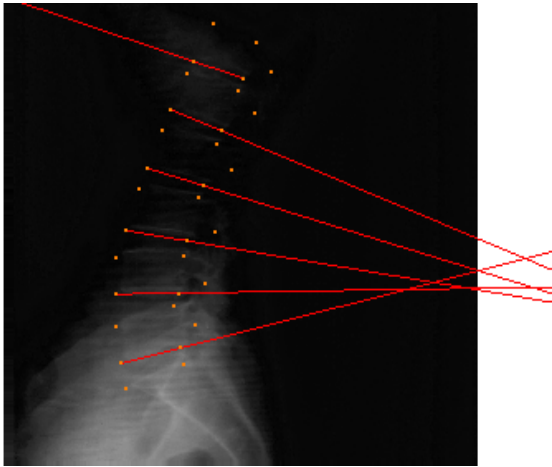
Doe, John 01/16/07
Lat Flex/Ext W/B [C5-SK]

	Patient (mm)	Established Abnormal (mm)	Established Ratable Threshold (mm)
C2	0.13 A	1 - 3	3.5
C3	1.45 P	1 - 3	3.5
C4	2.84 P	1 - 3	3.5

Motion Segment Integrity, Translational
A - Anterior, P - Posterior

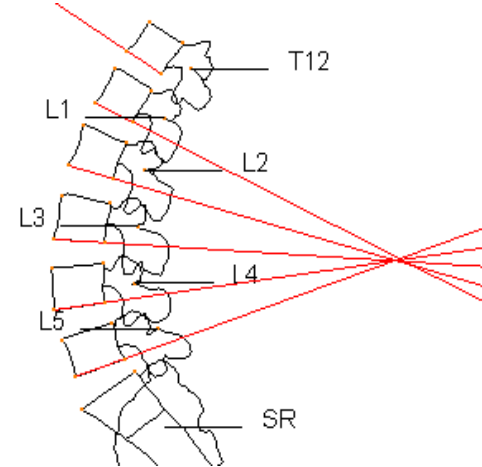
Translational motion is measured by determining the anteroposterior motion of one vertebra over another. Loss of motion is defined by translational motion that is greater than 3.5 mm in the cervical spine, 2.5 mm in the thoracic spine and 4.5 mm in the lumbar spine. Using DRE Cervical Category IV, loss of motion segment integrity may be assessed as 25%-28% Impairment of the Whole Person. Using DRE Lumbar Category IV, loss of motion segment integrity may be assessed as 20%-23 % Impairment of the Whole Person.

Doe, John 01/16/07
Lat Neut W/B [SR-T12]



Base Lines

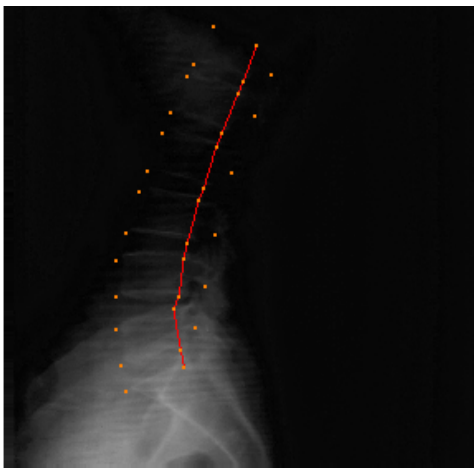
Std Lat
Lat Neut W/B [SR-T12]



Base Lines

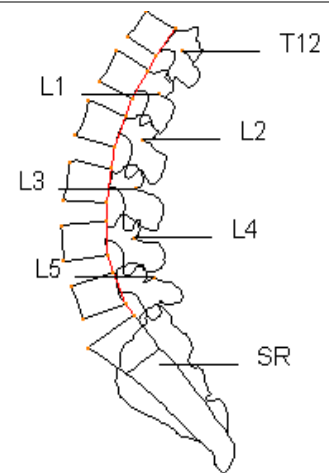
The lateral base lines are drawn from the inferior epiphyseal plates of each vertebra. The lines should converge on the posterior side of the lateral spine view at a central point. This is a qualitative analysis used to assist the physician in determining fixed flexion or fixed extension of vertebra(e). When a base line

Doe, John 01/16/07
Lat Neut W/B [SR-T12]



George's Line: T12/L1, L1/L2, L2/L3, L3/L4, L4/L5 and L5/S1

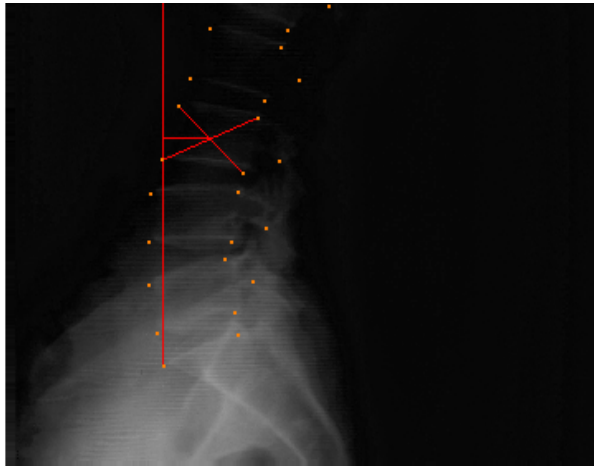
Std Lat
Lat Neut W/B [SR-T12]



George's Line:

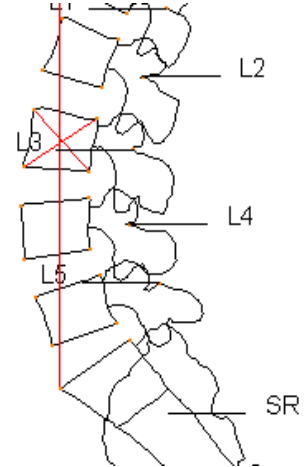
George's Line is also known as the posterior vertebral alignment line and the posterior body line. George's line is a measure of the integrity of the posterior vertebral body alignment. The key landmark is the alignment of one vertebra to a superior and inferior vertebra. Normally, there is a smooth vertical

Doe, John 01/16/07
Lat Neut W/B [SR-T12]



L3 Anterior/Posterior: 21.03 mm P

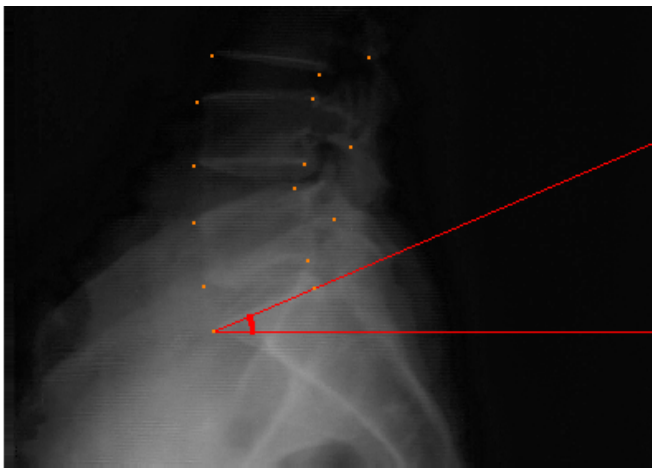
Std Lat
Lat Neut W/B [SR-T12]



L3 Anterior/Posterior: 1.09 mm P

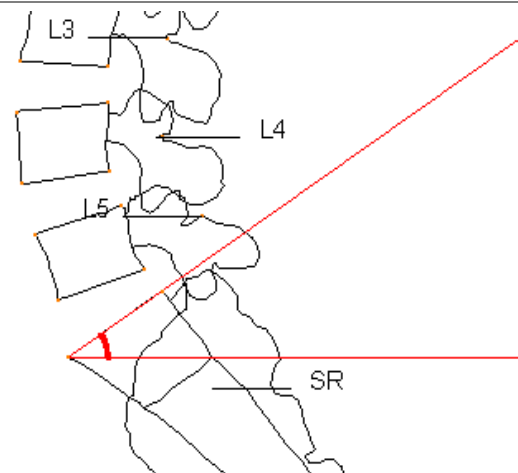
In this measurement the integrity of the position of the third lumbar vertebra is analyzed as it is an important segment in the distribution and transfer of weight and gravity in the upright spine. An anterior displacement of this segment indicates abnormal increase of lumbar curvature while a decrease indicates a

Doe, John 01/16/07
Lat Neut W/B [SR-T12]



Ferguson Angle 23.19° I

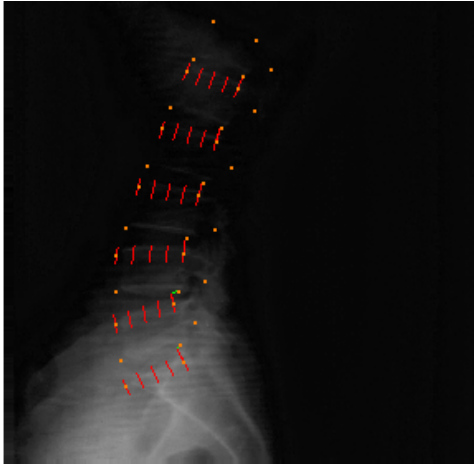
Std Lat
Lat Neut W/B [SR-T12]



Ferguson Angle 35.21° I

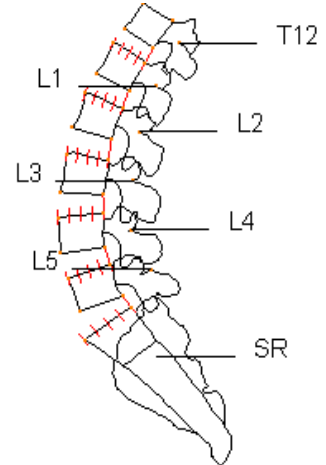
Ferguson's Angle is also known as the lumbosacral angle and the sacral base angle. This angle is formed when an oblique line is drawn through and parallel to the sacral base and joined with a line drawn horizontally. This measurement is integral to the assessment of the L5-S1 spinal junction. The average Ferguson's

Doe, John 01/16/07
Lat Neut W/B [SR-T12]



Lumbar Spondylolisthesis: Retrolisthesis at L1, L2, L3, L4, L5.

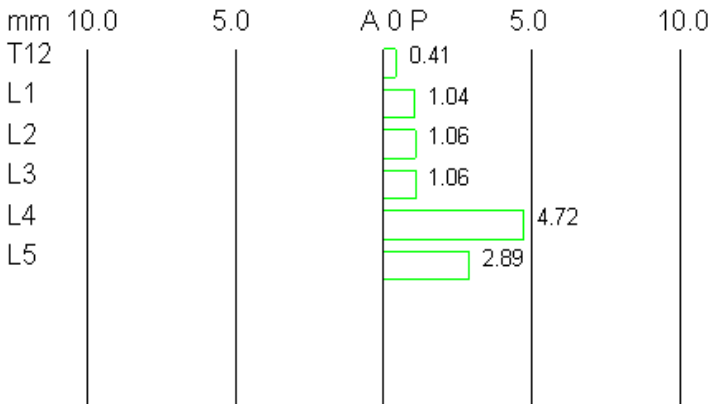
Std Lat
Lat Neut W/B [SR-T12]



Spondylolisthesis (None)

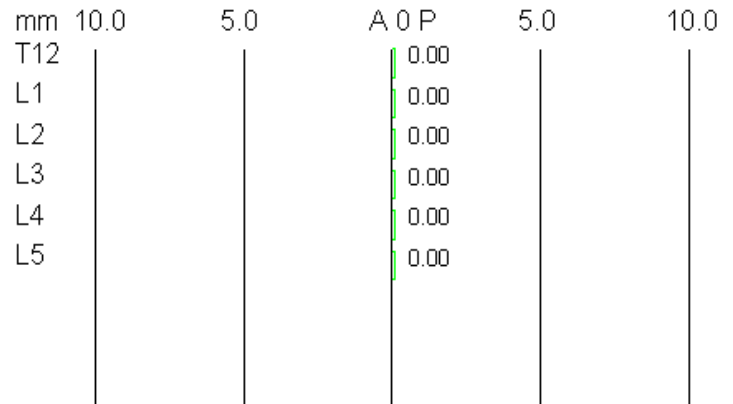
Spondylolisthesis is a displacement of a vertebral body in relation to the segment immediately below. The posterior inferior corner of the L5 vertebra is graded for anterior slippage which indicates ligamentous instability and/or fracture. 1-25% slippage is a grade one, 26-50% slippage is a grade two, and 51-75%

Doe, John 01/16/07
Lat Neut W/B [SR-T12]



Vertebral Offsets

Std Lat
Lat Neut W/B [SR-T12]



Vertebral Offsets

Translatory displacement is measured from the posterior inferior corner of the body of the superior vertebra to the posterior superior corner of the inferior vertebra. Measurement of 1-3mm is considered to be subluxation. A displacement of more than 3.5mm in the cervical spine, 2.5mm in the thoracic spine and