



YogaAnatomy.org

Leslie Kaminoff's
esutra blog, teaching
and touring schedules

PURE Yoga Austin, TX

Leslie Kaminoff

SUNDAY AM: The Spine in Action: Asana from the Inside Out

FIVE MOVEMENTS OF THE SPINE:

- ▶ Flexion
- ▶ Extension
- ▶ Lateral Flexion
- ▶ Axial Rotation
- ▶ Axial Extension

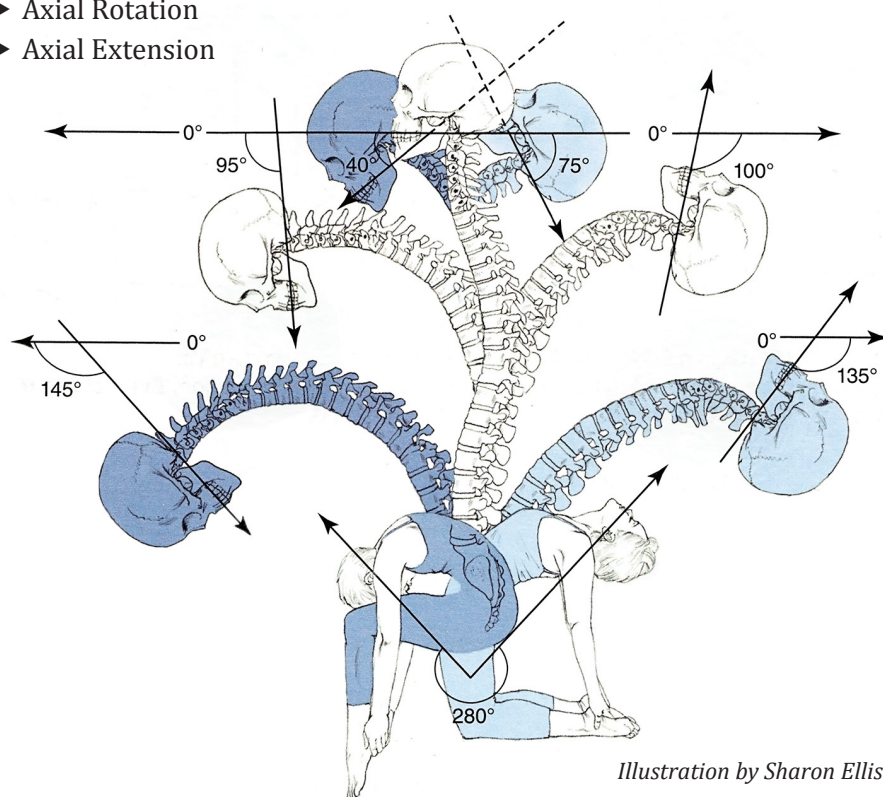


Illustration by Sharon Ellis

Still photos may be posted to social media if you tag lkaminoff (Facebook)/leslie.kaminoff (Instagram).

- leslie@yogaanatomy.org
- facebook.com/KaminoffYogaAnatomy
- workshop page: yogaanatomy.org/pureyoga-24
- survey: <http://y-an.org/student>
- breathingproject.com

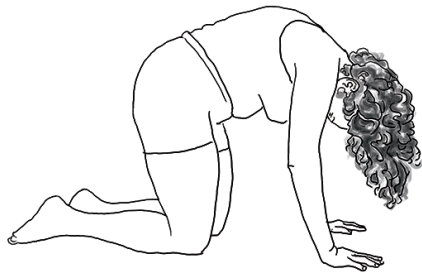
Print on-demand selections from Lydia Mann's anatomy art collection available at bit.ly/anatomy-art

	FLEXION		EXTENSION		COMBINED
		avg/vert		avg/vert	
C1-C7	40°	5.7	75°	10.7	115°
T1-T12	45°	3.8	25°	2.0	70°
L1-L5	60°	12.0	35°	7.0	95°
TOTAL	145°		135°		280°

LATERAL FLEXION		AXIAL ROTATION	
	avg/vert		avg/vert
35°	5.0	50°	7.1
20°	1.7	35°	2.9
20°	4.0	5°	1.0
75°		90°	

Flexion = shape of the primary curve

- ▶ increase of primary curves, decrease of secondary curves)
- ▶ Anterior part of spine is more concave, posterior part of spine is more convex
- ▶ ex: shape of "Cat"



Extension = shape of the secondary curve

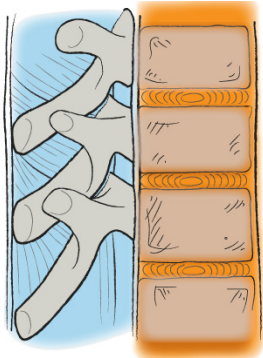
- ▶ increase in secondary curves, decrease in primary curves
- ▶ Anterior part of spine is more convex, posterior part of spine is more concave
- ▶ ex: shape of "Cow"



Sthira: Protection for the central nervous system

Sukha: Range of motion for freedom of movement

THE TWO COLUMNS OF THE SPINE:



Sthira: Anterior (Red)

vertebral bodies and discs

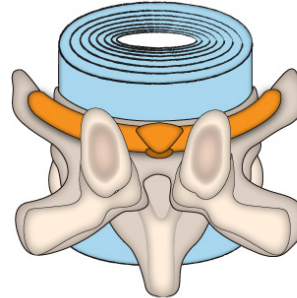
Sukha: Posterior (Blue)

arches, processes, ligaments

INTERVERTEBRAL DISC STRUCTURE:

concentric rings of the annulus fibrosus

surround the nucleus pulposus



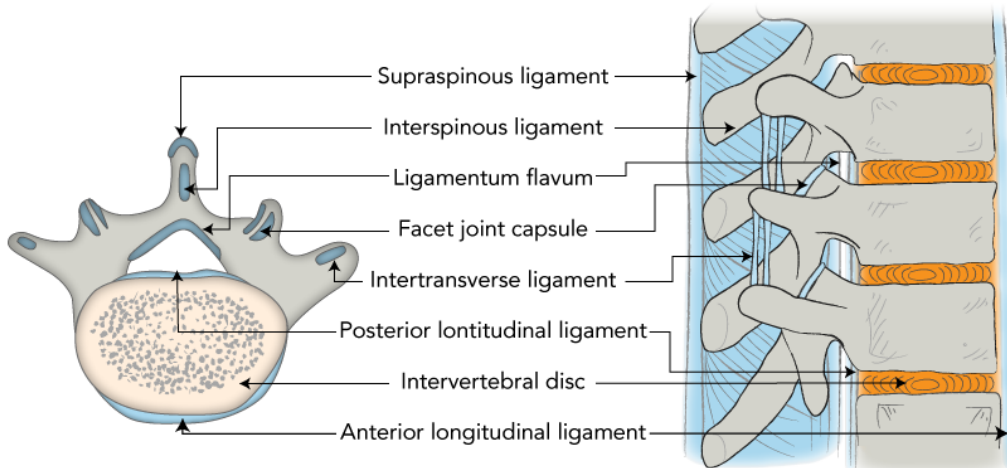
THE LIGAMENTS OF THE SPINE :

Posterior column : Sukha

Range of motion for freedom of movement; the posterior arches, processes, ligaments

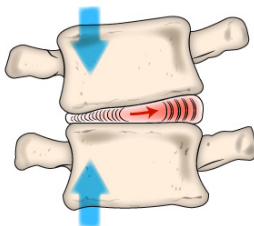
Anterior column : Sthira

Protection for the central nervous system; the anterior vertebral bodies and discs



MOVEMENTS OF THE VERTEBRAE:

- ▶ propel the nucleus of the disc
- ▶ in the opposite direction,
- ▶ which builds energy within the disc
- ▶ to help return the vertebrae to neutral



AXIAL ROTATION (TWISTING)

- ▶ flattens the nucleus,
- ▶ propelled by the annulus to regain its height,
- ▶ leads to an opposing spiral
- ▶ in the spine.

