

# The Spine

How to Protect your Back when Practicing Yoga



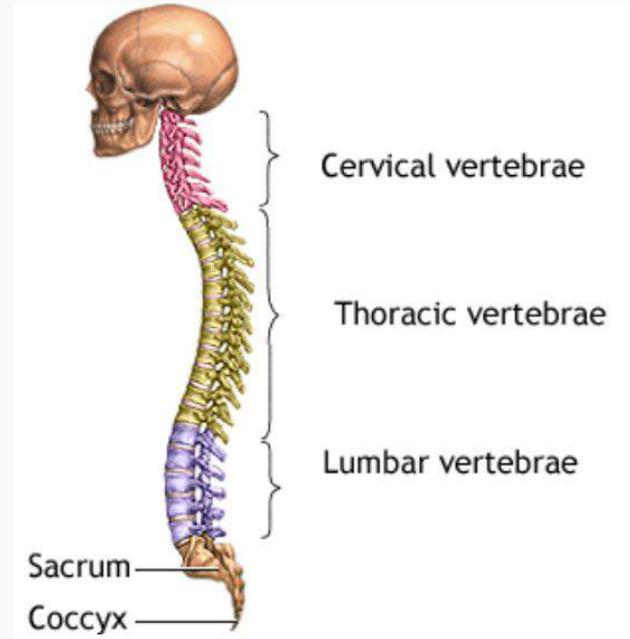
# Overview

- **6 Movements** of the Spine
- **Bones & ligaments** of the Spine
- **3 Main Muscles** Supporting your Spine
- **3 Ways to Protect** your Spine



# Sections of the Spine

- **Neck** = Cervical spine
- **Mid-back** = Thoracic spine
- **Low-back** = Lumbar spine
- **Low-low-back** = Sacrum
- **Tailbone** = Coccyx



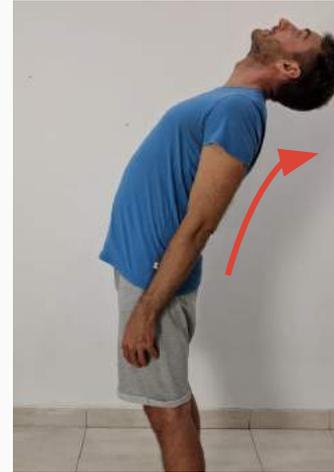
Side View



# Movements of the Spine



**Flexion**  
(Bend)



**Extension**  
(Lengthen/Straighten)



# Movements of the Spine



**Left Lateral Flexion**  
(Bend to the Left)



**Right Lateral Flexion**  
(Bend to the Right)



# Movements of the Spine



**Left Side Rotation**  
(Turning to the Left)



**Right Side Rotation**  
(Turning to the Right)



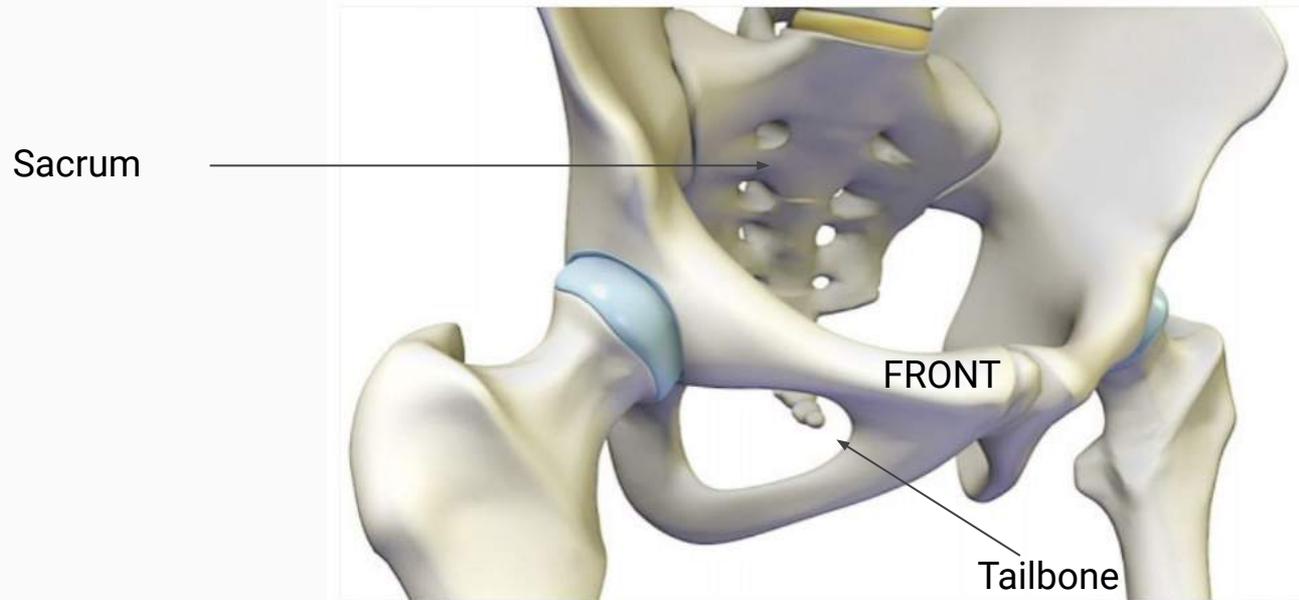
# Movements of the spine

Each Section has a different range for each movement:

	Flexion-Extension	Rotation	Lateral Bend
Cervical Spine	50°	50°	60°
Thoracic spine	75°	70°	75°
Lumbar spine	85°	10°	30°



# Spine connects to the pelvis



# 2 Movements of the Pelvis



**Anterior Pelvic Tilt**  
(Roll your hips forward)

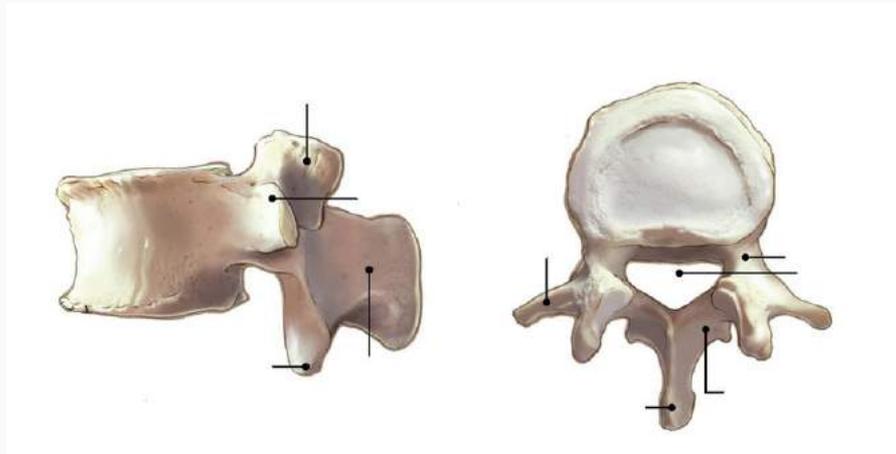


**Posterior Pelvic Tilt**  
(Lengthen tailbone down)



# Bones of the Spine

A single vertebral segment:



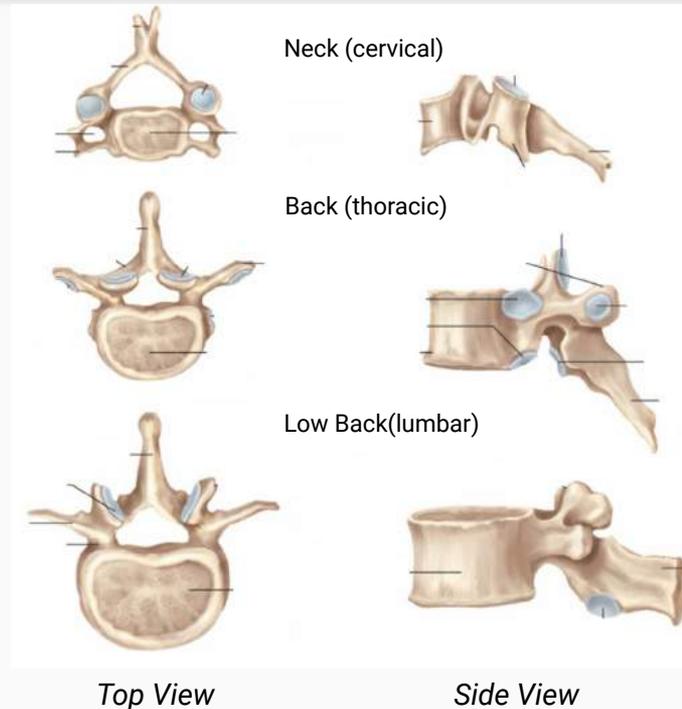
*Side View*

*Top View*



# Bones of the Spine

- Notice the **difference between each section** of the spine, and how the **bone is shaped differently**.
- What does this tell us about practicing poses like:
  - Headstand
  - Tripod headstand, or
  - Shoulder stand



# Ligaments of the Spine

- **Vertebral disc**
  - Cushions the weight going through the spine.
- **When you wake up in the morning**
  - The discs hold more water than usual
  - Increase pressure in the space
  - Spine can feel “stiff” or sore
  - May take 30-60 minutes before things feel loosened up.



Side View



# Muscles of the spine

- Many muscles act as support to the spine, otherwise we'd just collapse.
- Your abdominal muscles and your back muscles combine to make up your “core”.
- **Think of your back/spine/core as a building**
  - What happens when one side of the building is weaker?
  - More likely to fall, right? → Resulting in compromising the spinal cord, discs etc.



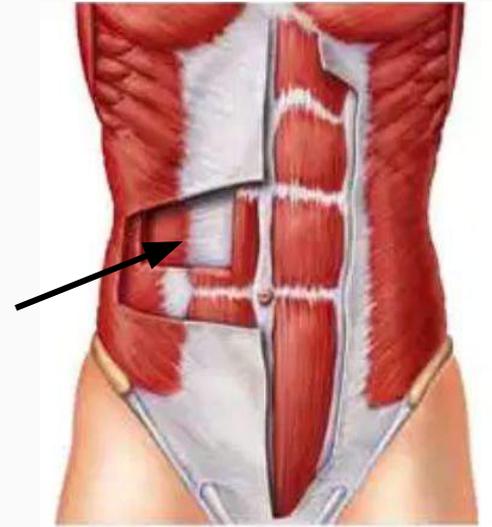
# 3 Main Muscles Supporting the Spine

- **Transversus Abdominis**
- **Multifidus Muscles**
- **Gluteal (Butt) Muscle Group**



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Front View

*\*Draw the belly in*

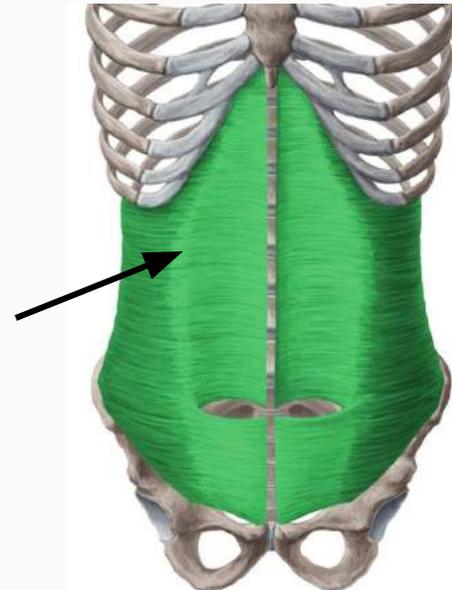
*\*Lift your lower abdomen*

*\*Hold strong in your core*



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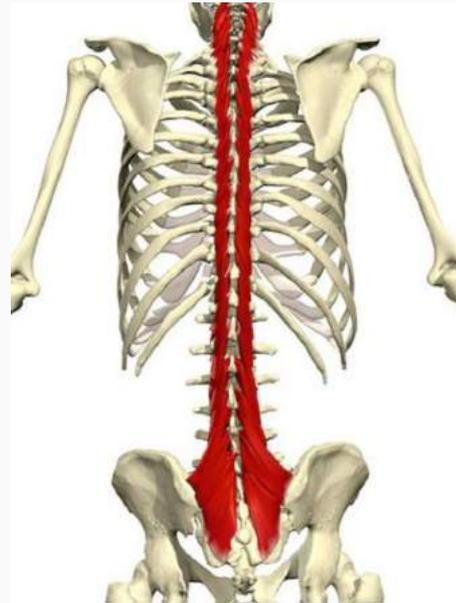
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*Back View*

*\*Lengthen (through) the spine*

*\*Extend through the crown of your head*

*\*Get long in your spine*



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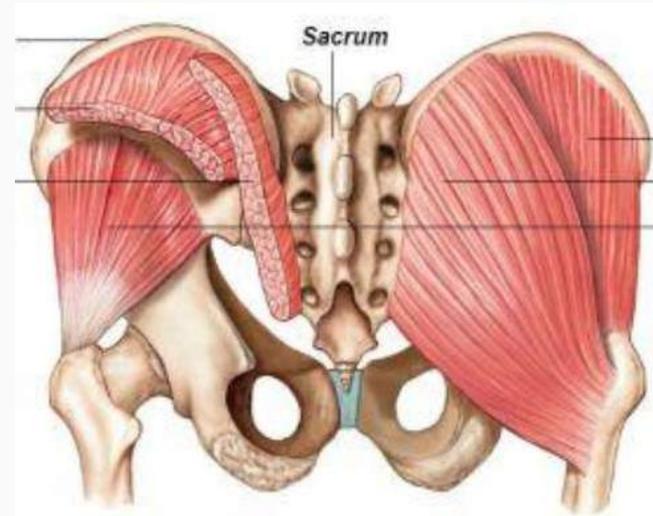
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Back View

*\*Engage your glutes*

*\*Squeeze your butt*

*\*Push your hips forward*

*\*Lengthen your tailbone down*



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**Lower back pain** can often be connected to **weakness or inactivation** in at least one of these muscle groups.



\*\*The Psoas is also included in this group of low back pain possible contributors



“What position is the spine in, when most people hurt themselves in a yoga practice?”



# 3 Ways to Protect Your Spine

- **Be aware** of your posture/position
- **Balance of movement** in your spine
- **Balance of strength & control** in your muscles



# 3 Ways to Protect Your Spine

## Be Aware of your posture/position

- No posture is “**bad**”; No posture is “**good**”
- **What’s dangerous is:**
  - #1 Prolonged positions or postures  
*(Think of times when you’re in one position for a long time)*
  - #2 Not stacking the spine, or engaging muscles that support the spine  
*(Especially when lifting outside or away from your center of balance)*



# 3 Ways to Protect Your Spine

## Balance of Movement in your Spine

- Explore all movements of the spine, while remembering that EVERYONE spends most of their time in spinal flexion (forward bending).
- If the theme of your class is “twists”, incorporate all spinal movements in the class, don’t just do twists.
- Do a couple side bends, and a couple Sun A’s to get the flexion and extension as well.

**= A nice balanced movement class for your spine.**



# 3 Ways to Protect Your Spine

## Balance of Movement in your Spine

Counter-Poses for the Spine:

★ **Flexion**  $\longleftrightarrow$  **Extension** =

Gentle transition from one to the other with an easier pose in between

Example: Chakrasana  $\rightarrow$  supta baddha konasana  $\rightarrow$  happy baby



# 3 Ways to Protect Your Spine

## Balance of Movement in your Spine

### Counter-Poses for the Spine:

#### ★ **R Rotation** $\longleftrightarrow$ **L Rotation** =

- For deep rotations, avoid doing opposite sides back-to-back.
- Instead, break it up and come back to the other side:

Example: (R) Twisted side-angle  $\rightarrow$  vinyasa flow  $\rightarrow$  (L) Twisted side-angle



# 3 Ways to Protect Your Spine

**Balance of Strength and Control** in your muscles:

- Transversus abdominis
- Multifidus
- Gluteal Muscles

**Warm up these muscles with easy and gentle poses** at the beginning of class.

**Focus cues on engaging these muscles** in preparation for more challenging poses.

*(How do we do that? → Next slide)*

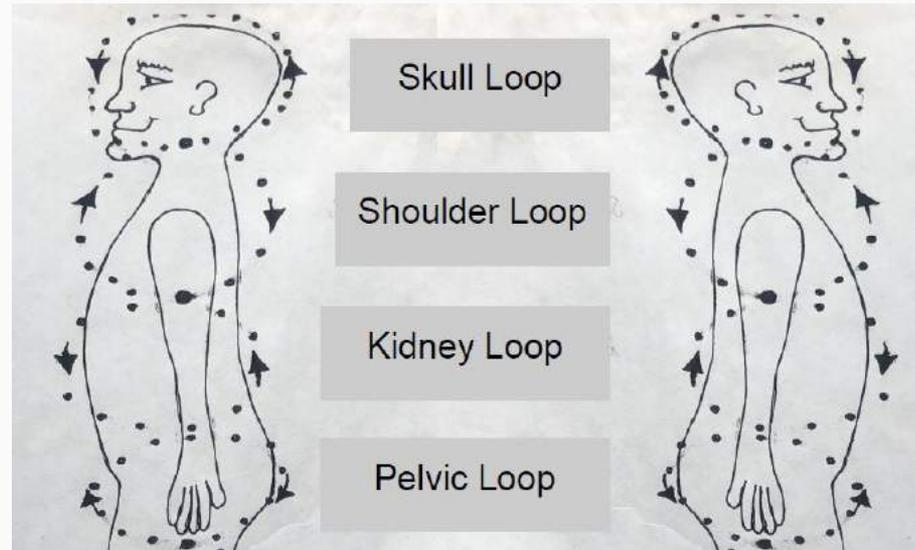


# 3 Ways to Protect Your Spine

## Help your students to:

- Fire up,
- Warm-up or
- Activate

those muscles by using the spirals of energy within the easier poses, at the beginning of class.



# What about the neck?

## Neck extension and looking up:

- Typically in back bends, we extend the head back as well.
- However, we can often be unaware of how far back we're 'extending'
- Especially if someone has limited extension in their spine, they will use their neck extension (actually cranial extension), to “try” to go deeper into the back bend.



# What about the neck?



# What about the neck?



# What about the neck?



# What about the neck?



# What about the neck?



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# Transversus Abdominis Activation

- ❖ Lying on your back with your knees up and feet on the floor.
- ❖ Place your fingers on the front of your pelvis (ASIS). Move your fingers inward 1 inch and down 1 inch.
- ❖ Keeping your fingers in place, draw your belly button in;  
Or lift your lower abdomen;
- ❖ You should feel the transverse abdominis muscle engage.



If you feel a BIG bulging up, then chances are you're contracting your larger abdominal muscles.

Try again, and think of the subtle movement.

Once you get it, hold it for 10 secs and continue to breathe.  
Repeat 5-10 times twice per day for about 2 days.



# Transversus Abdominis Training

You can build ABDOMINAL strength with postures like:

- ★ Marjariasana (cat pose)
- ★ Paripurna navasana (boat)
- ★ Utkatasana (chair)
- ★ Plank and forearm plank
- ★ Vasisthasana (side plank)

However, any pose can be a core strengthening pose, when you focus on spirals of energy.



# Multifidus Activating

- ❖ Either standing with your hands on the wall or in Bitilasana (cow pose)
- ❖ Arch the lower back and lengthen through the spine from your buttock to the base of your skull.
- ❖ Really visualize this muscle contracting to curve the spine upward.



# Multifidus Training

You can build BACK strength with postures like:

- ★ Ardha Bhujangasana (baby cobra)
- ★ salabhasana (locust)
- ★ Parsva Balasana (Bird Dog)
- ★ virabhadrasana III (warrior III)

Even in a seating posture, you can engage the multifidus to lengthen the spine up and slightly back. (like you're sticking the chest out)



“A man without  
a spine, is a  
pool of skin on  
the ground.”

-Paavandeep Singh



I've got  
your back.

