

#ideaworld



LIMITLESS

# The Anatomy of Your Abs and Core

PRESENTED BY

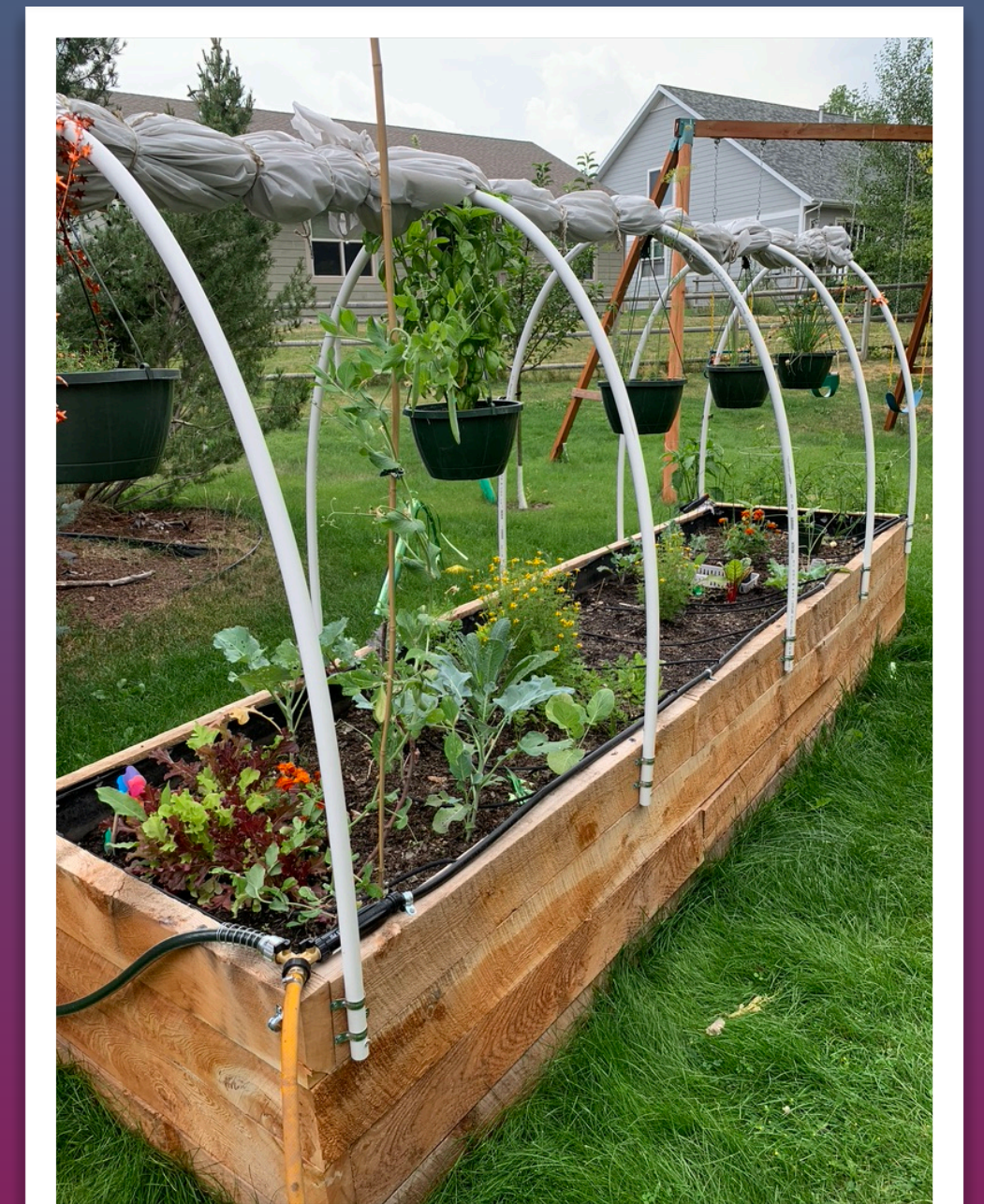
**Beverly Hosford, MA**

# Guided Visualization



## Beverly Hosford, MA (she, her)

- Anatomy & Physiology teacher at Sacred Roots Massage School in Bozeman, MT
- Fit Pro for 20 years
- BS in Exercise Science
- MA in Exercise Psychology
- ACE Personal Trainer
- Sleep specialist
- Mama of two kids (age 3 & 5)
- Ski, hike, bike in Montana
- Gardening & cooking



# Phases of Anatomy

1. Look at the images
2. Palpate the muscles on yourself
3. Locate origin and insertion
4. Explore actions
5. Design exercises

# Abdominals

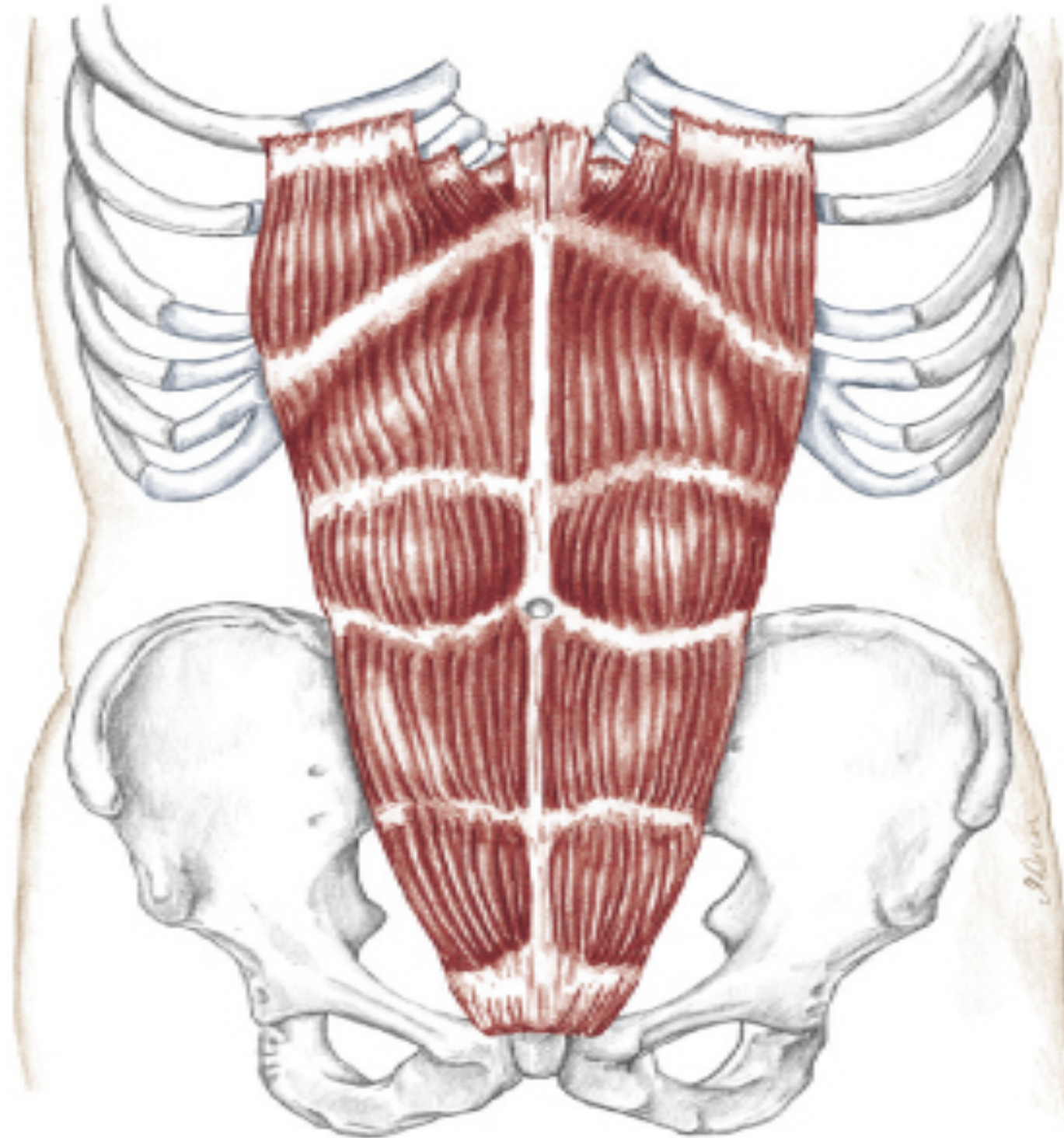
1. Rectus Abdominus - standing erect
2. External Oblique - mad at my ex, hands in pockets
3. Internal Oblique - going in to the tent
4. Transverse Abdominus - train, transportation
5. Pyramidalis
6. Quadratus Lumborum - curtain

**\*\*Standing erect\*\***

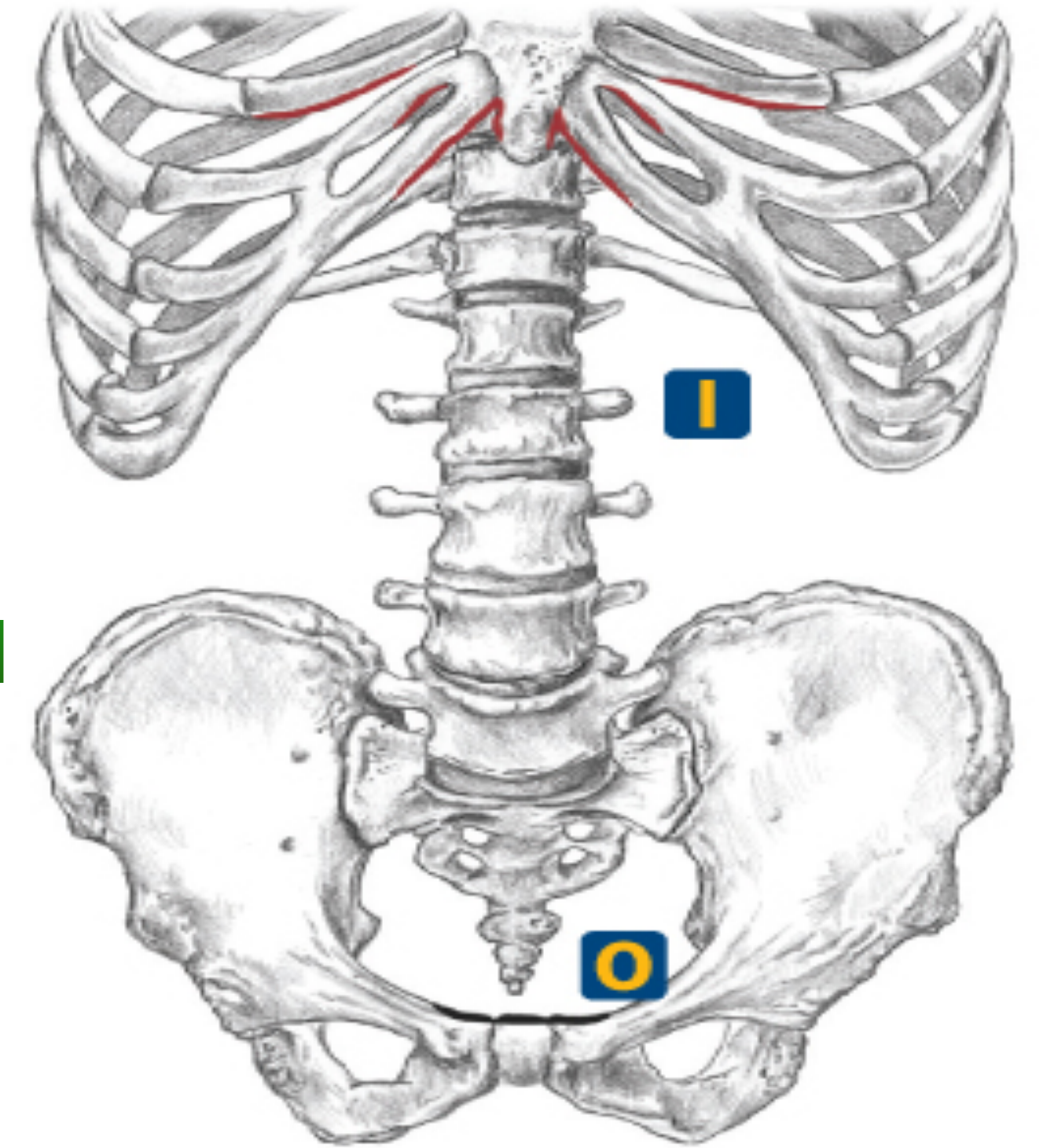
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### Rectus Abdominis

- A** Flex the vertebral column  
Tilt pelvis posteriorly
  - O** Pubic crest, pubic symphysis
  - I** Cartilage of fifth, sixth and seventh ribs and xiphoid process
  - N** T5, 6, T7-11, T12, ventral rami
- 



**4.98** Anterior view of rectus abdominis



**4.99** Anterior view showing origin and insertion

# Rectus abdominus



**\*\*Mad at my Ex\*\***  
**\*hand in pockets\***

## External Oblique

**A** *Unilaterally:*  
**Laterally flex** vertebral column  
to the same side

**Rotate** vertebral column  
to the opposite side

*Bilaterally:*

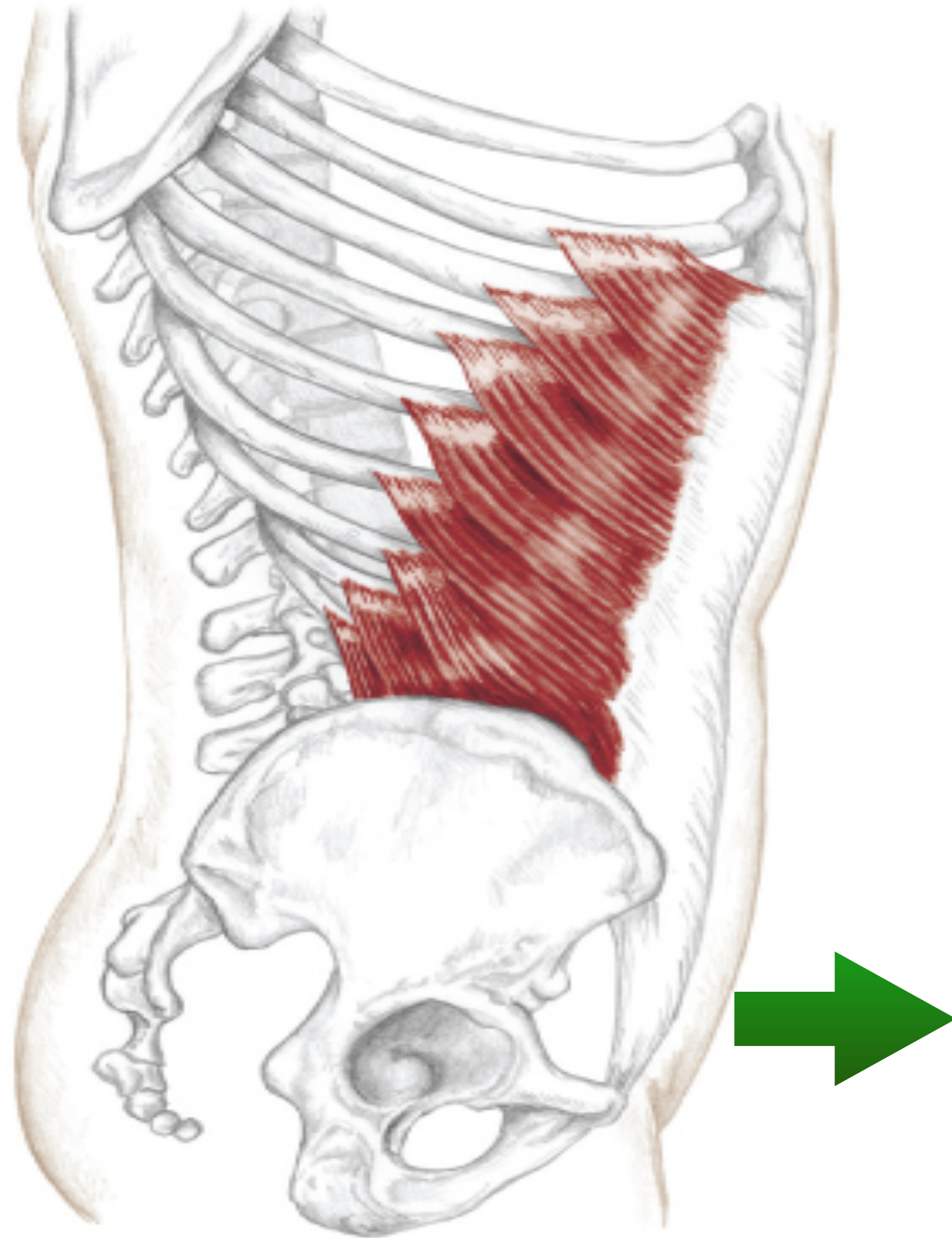
**Flex** the vertebral column

**Compress** abdominal contents

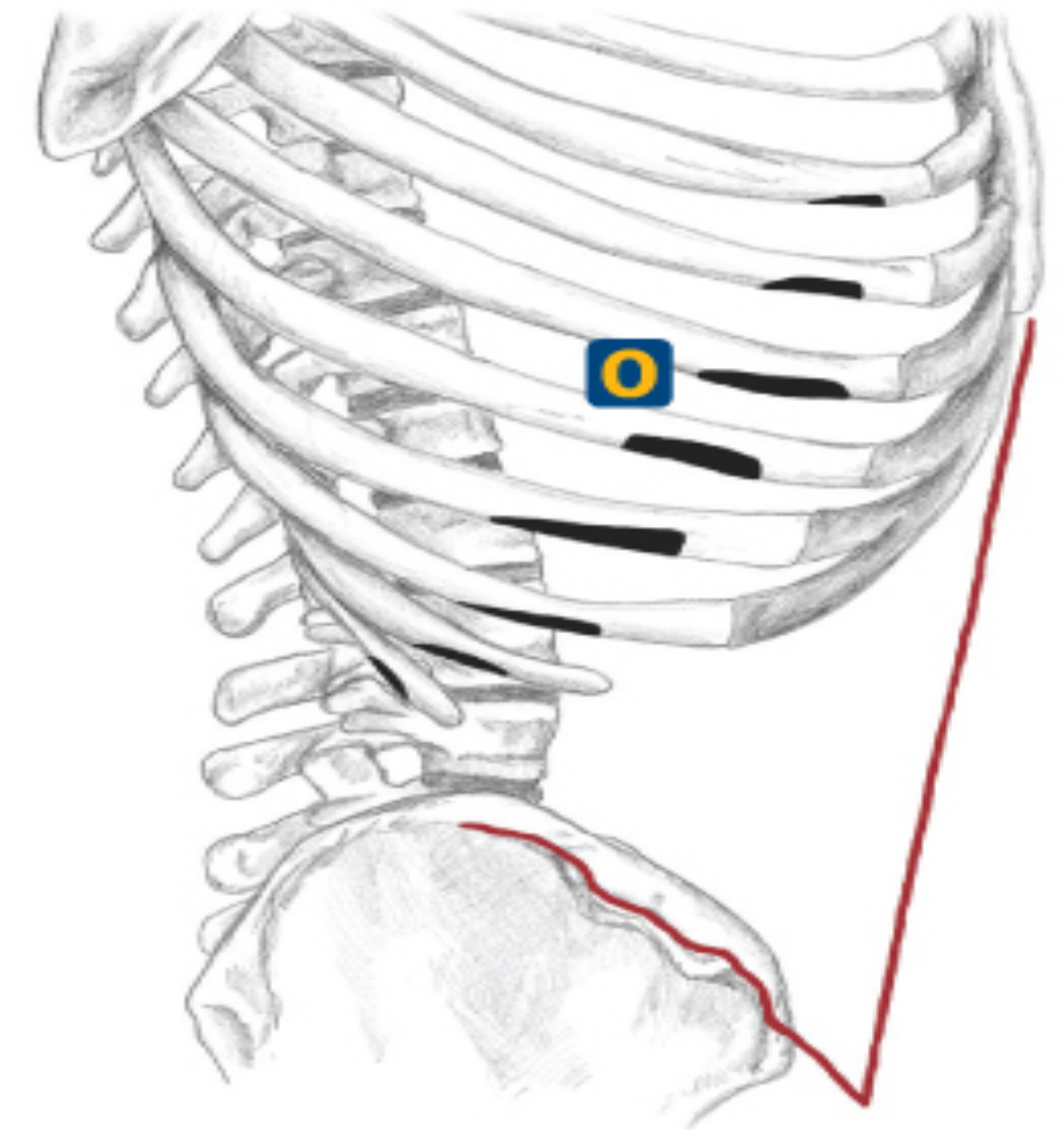
**O** External surfaces of fifth to twelfth ribs

**I** Anterior part of the iliac crest,  
abdominal aponeurosis to linea alba

**N** (T5, 6), T7-11, T12



**4.100** Lateral view  
of external oblique



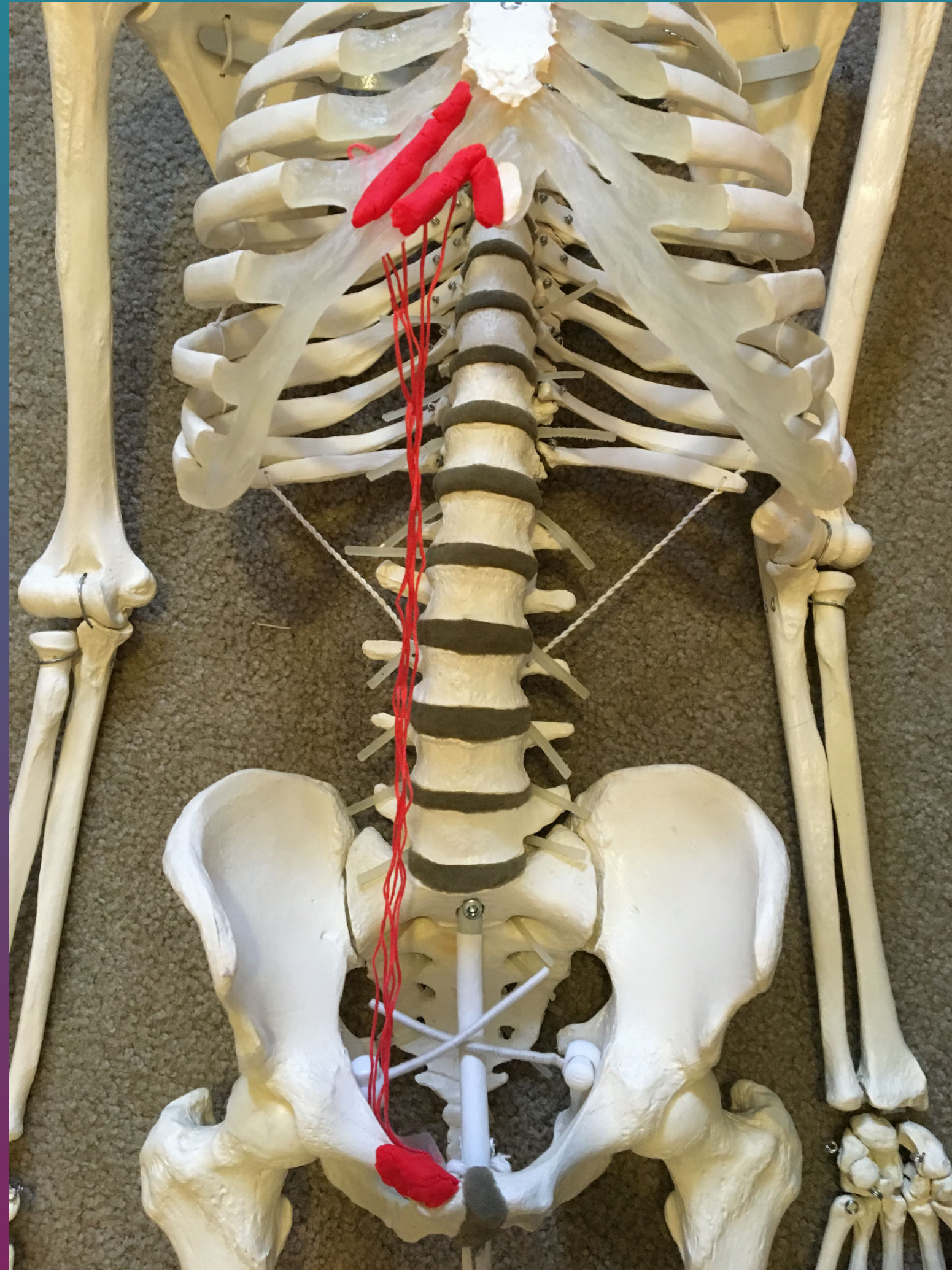
**4.101** Lateral view showing  
origin and insertion



# External oblique



# Find on yourself & partner

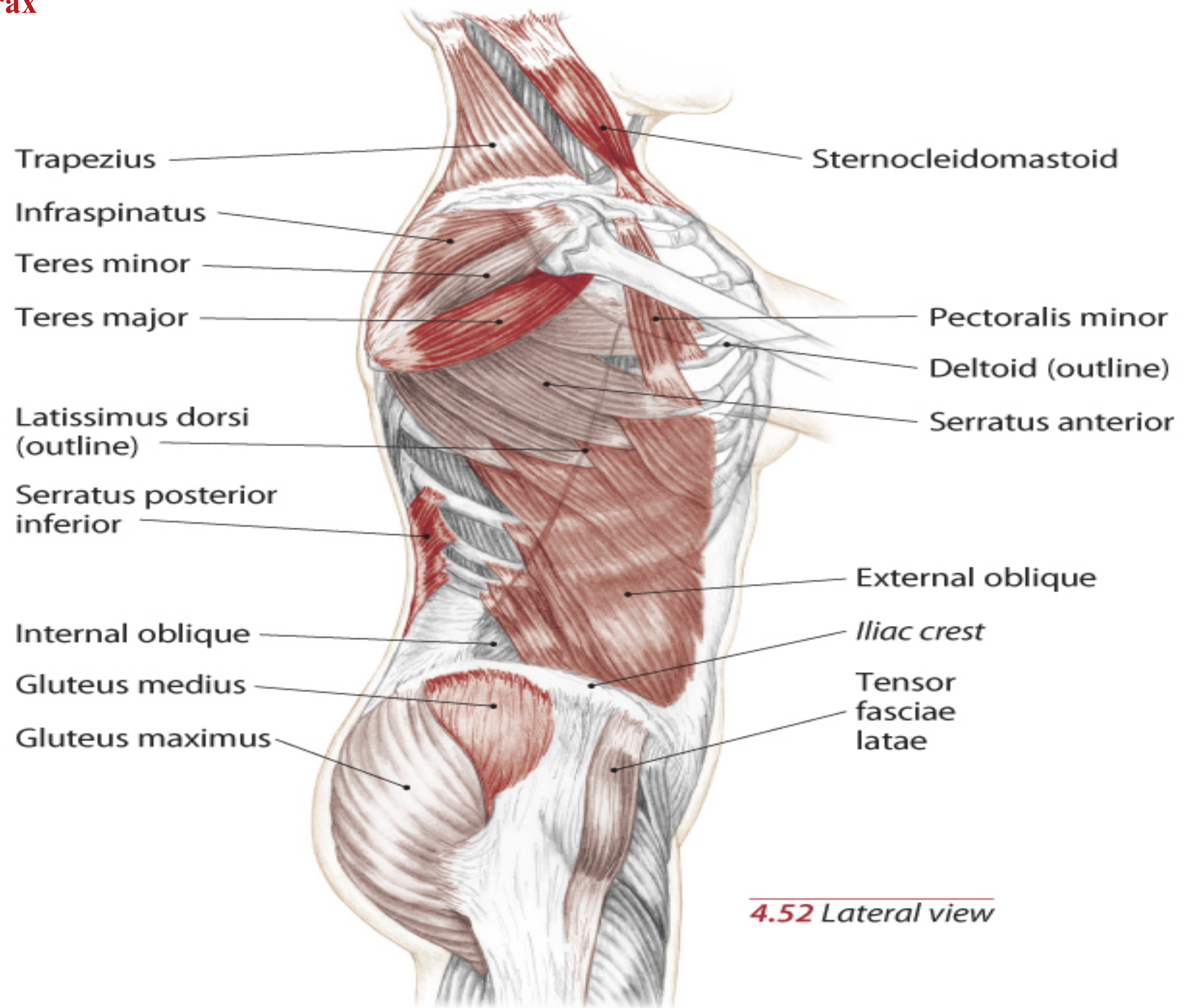


Rectus Abdominus



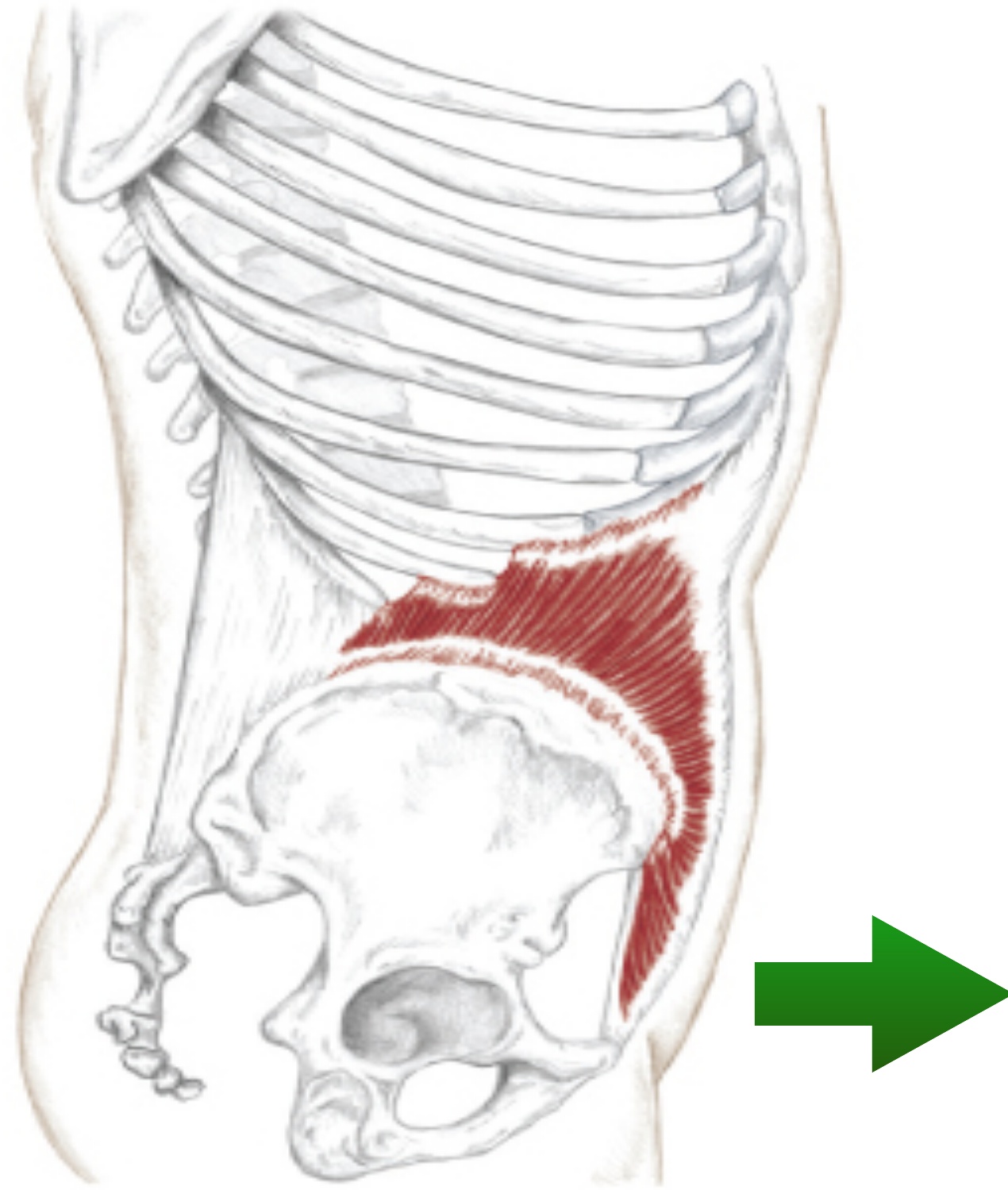
External Oblique

## Muscles of the Spine and Thorax Lateral View



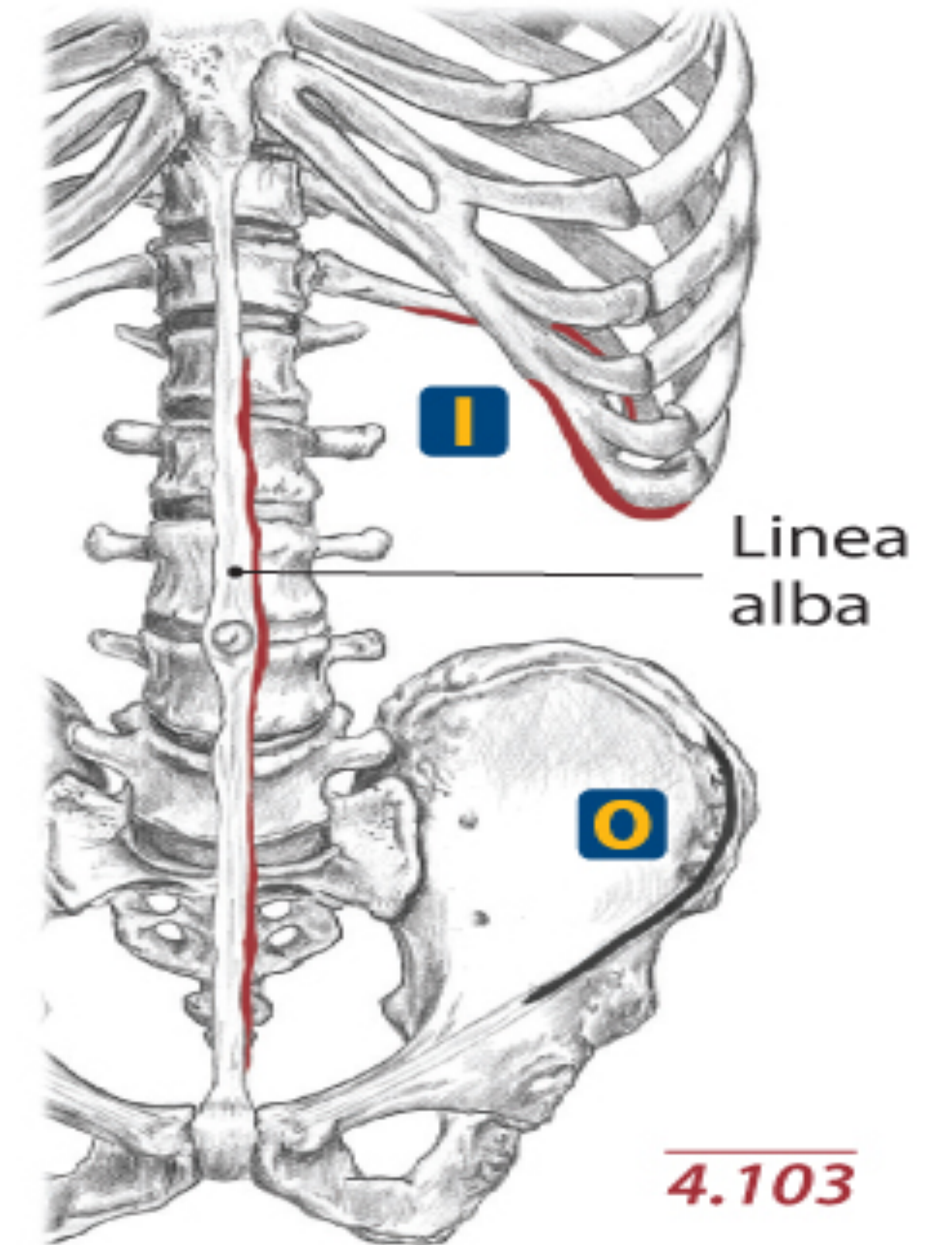
**4.52** Lateral view

## Internal Oblique



**4.102** Lateral view of internal oblique

- A** Unilaterally:
  - Laterally flex** vertebral column to the same side
  - Rotate** vertebral column to the same side
- Bilaterally:
  - Flex** the vertebral column
  - Compress** abdominal contents
- O** Lateral inguinal ligament, iliac crest and thoracolumbar fascia
- I** Internal surface of lower three ribs, abdominal aponeurosis to linea alba
- N** T7, 8, T9-12, L1, iliohypogastric and ilioinguinal, ventral rami



# Internal oblique

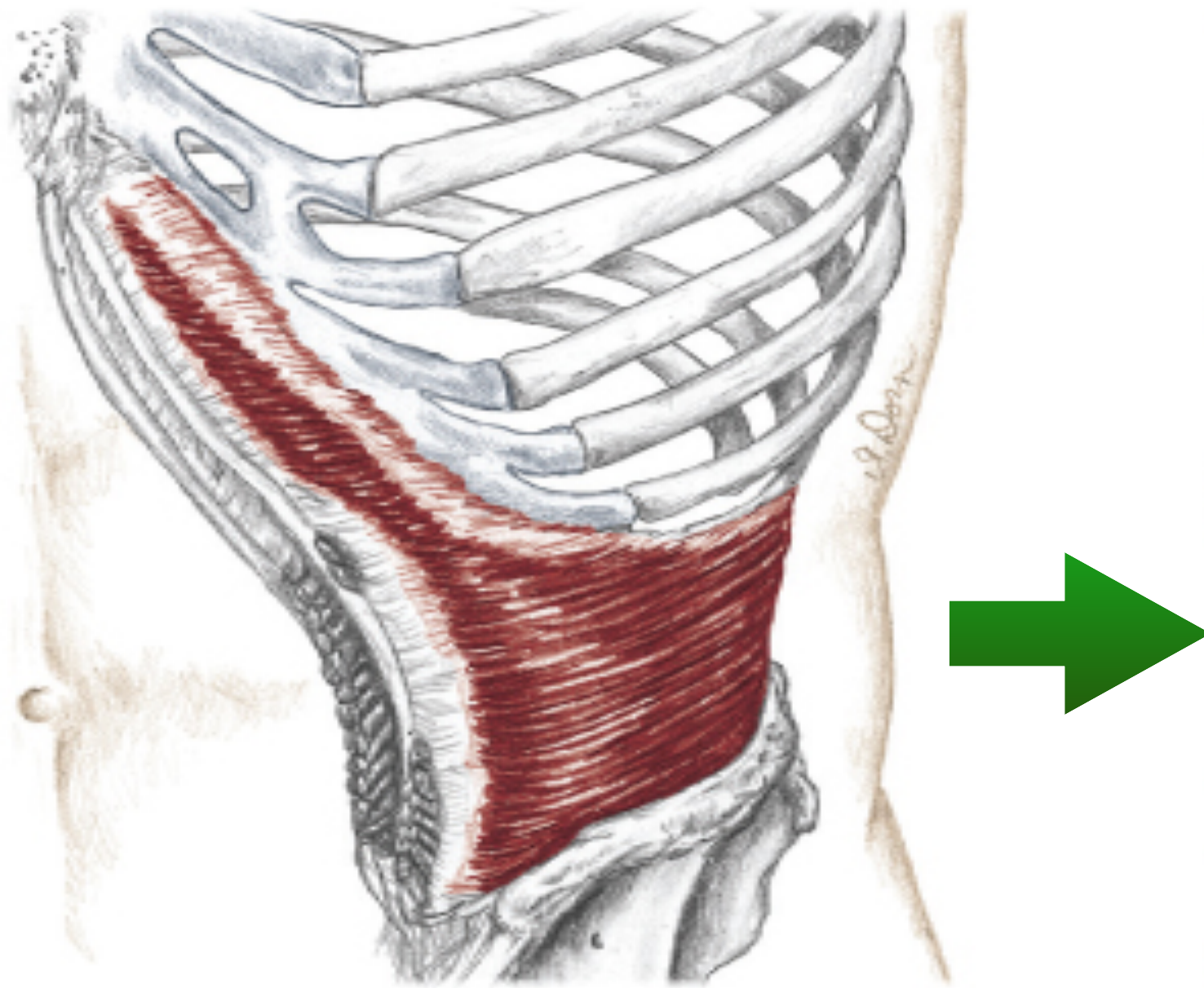


# Find on yourself & partner



Yellow: Internal Oblique

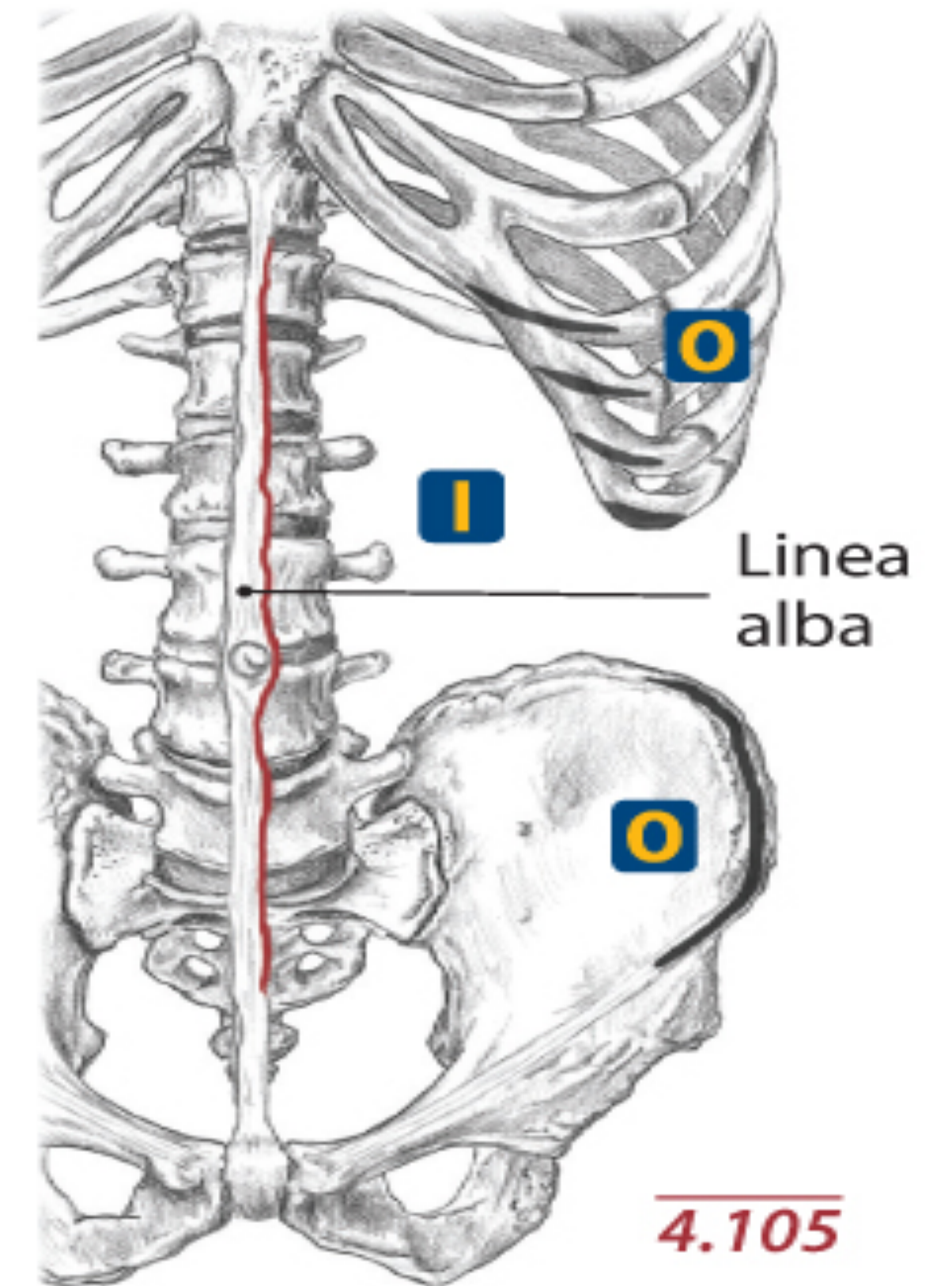
**\*\*Train - Transportation\*\***



**4.104** Anterior view of transverse abdominis (both obliques cut and reflected)

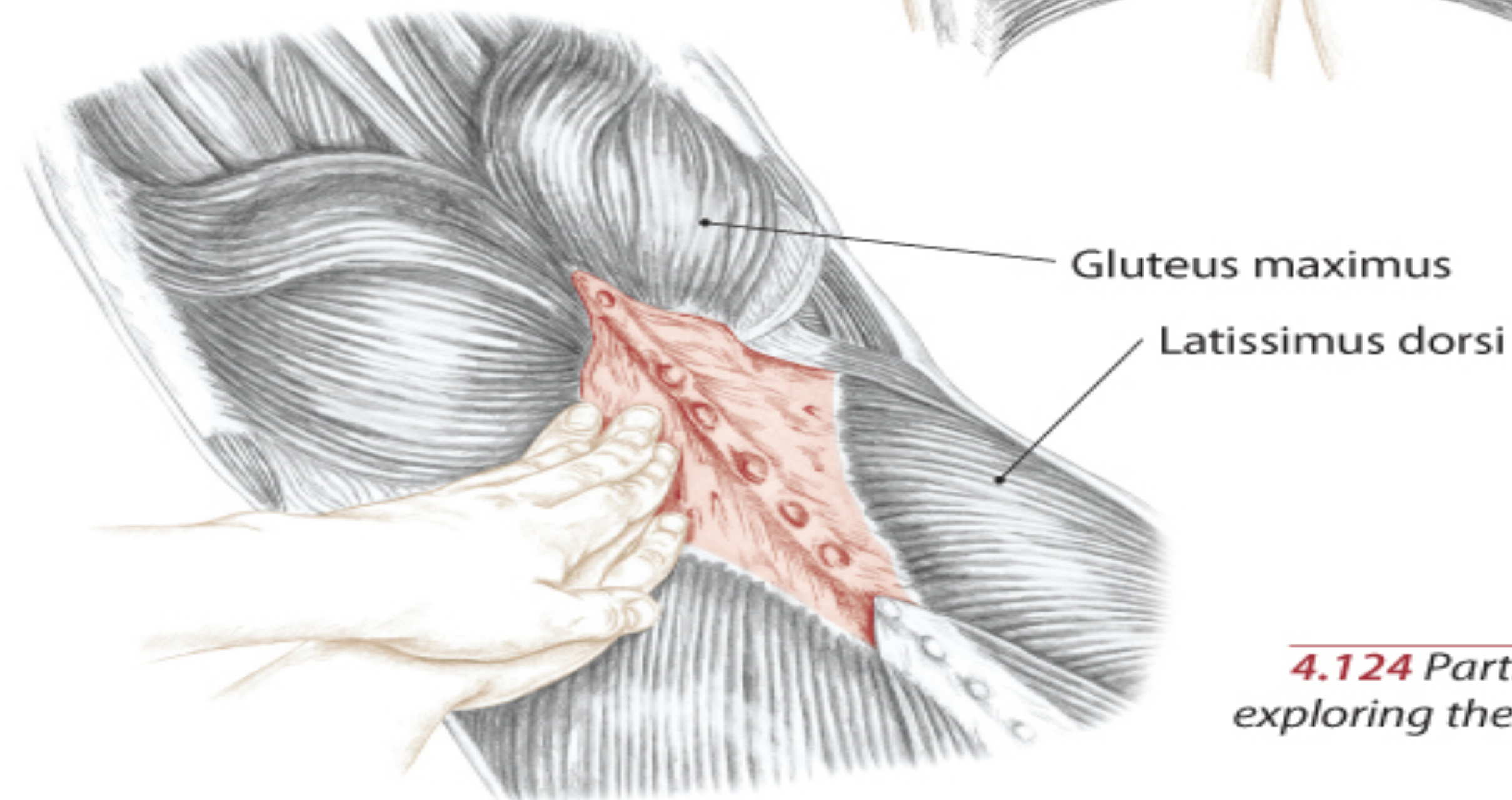
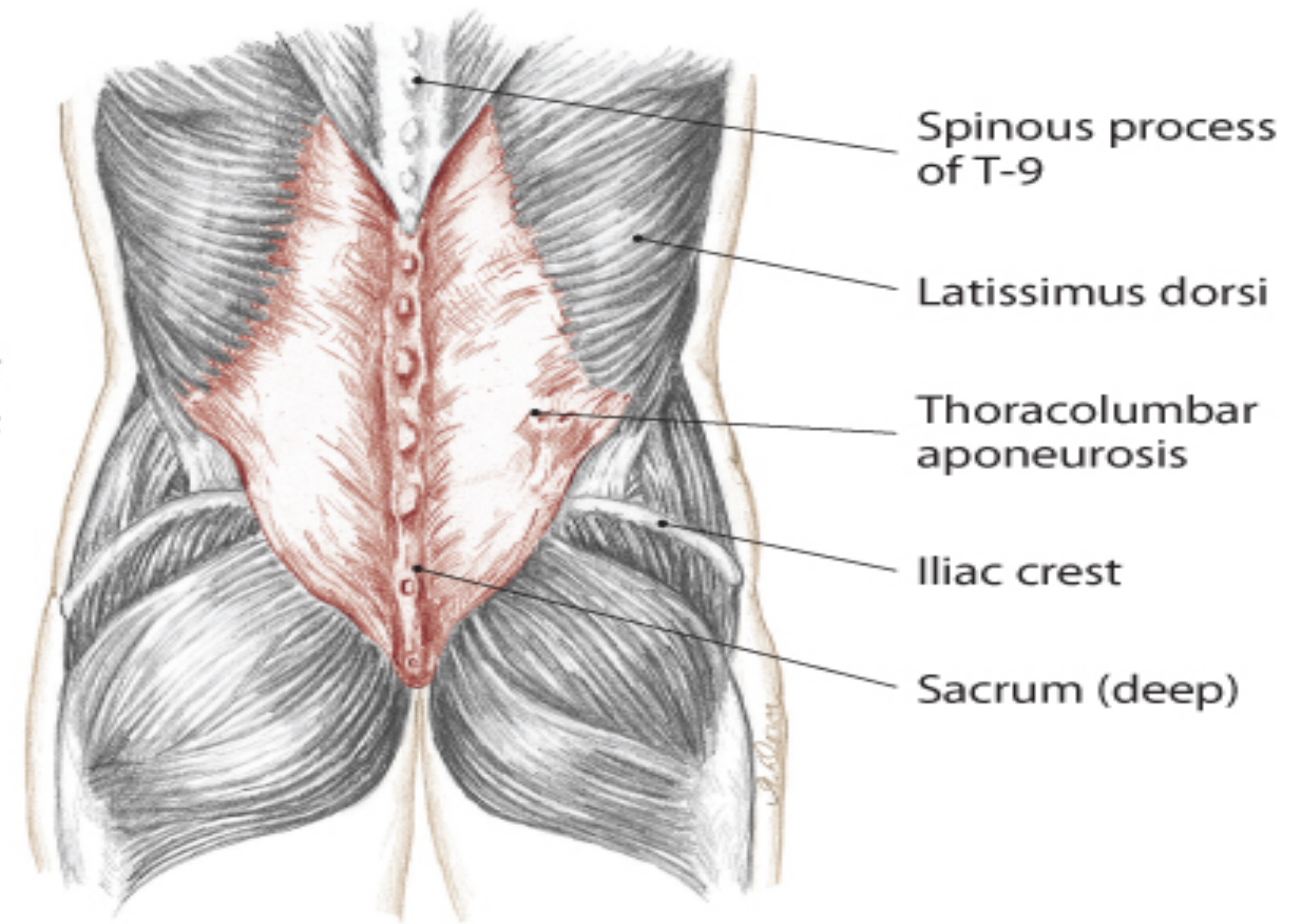
**Transverse Abdominis**

- A** **Compress** abdominal contents
- O** Lateral inguinal ligament, iliac crest, thoracolumbar fascia and internal surface of lower six ribs
- I** Abdominal aponeurosis to linea alba
- N** T7-12, L1, iliohypogastric and ilioinguinal, ventral divisions



## Thoracolumbar Aponeurosis

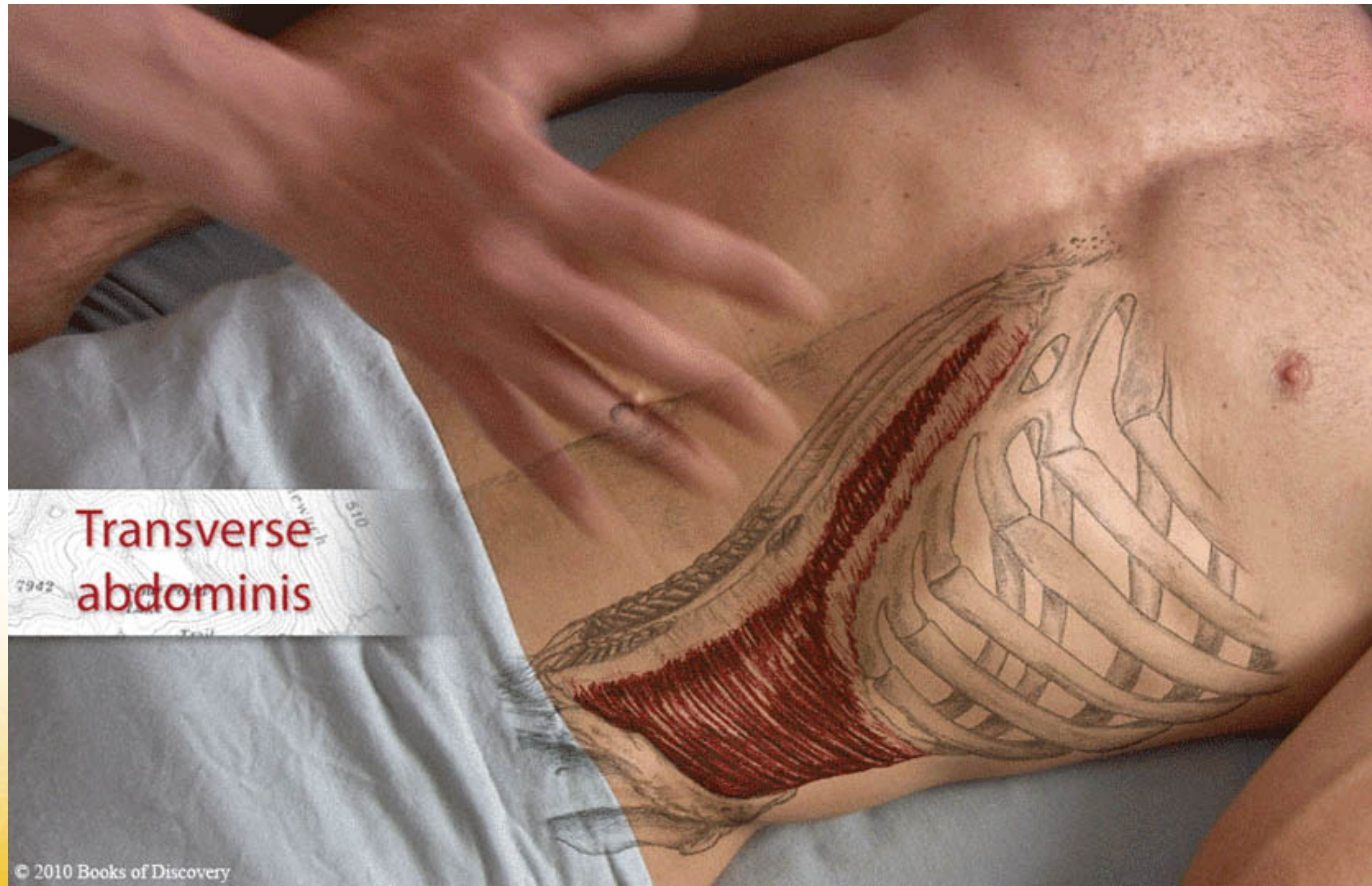
**4.123** Posterior view of lower thorax and pelvis



**4.124** Partner prone, exploring the aponeurosis



# Transverse abdominis



# Four Core Abdominals

**Rectus  
Abdominus**  
Standing erect

**Internal Oblique**  
Go into the Tent



**External Oblique**  
Mad at my ex,  
hands in pockets

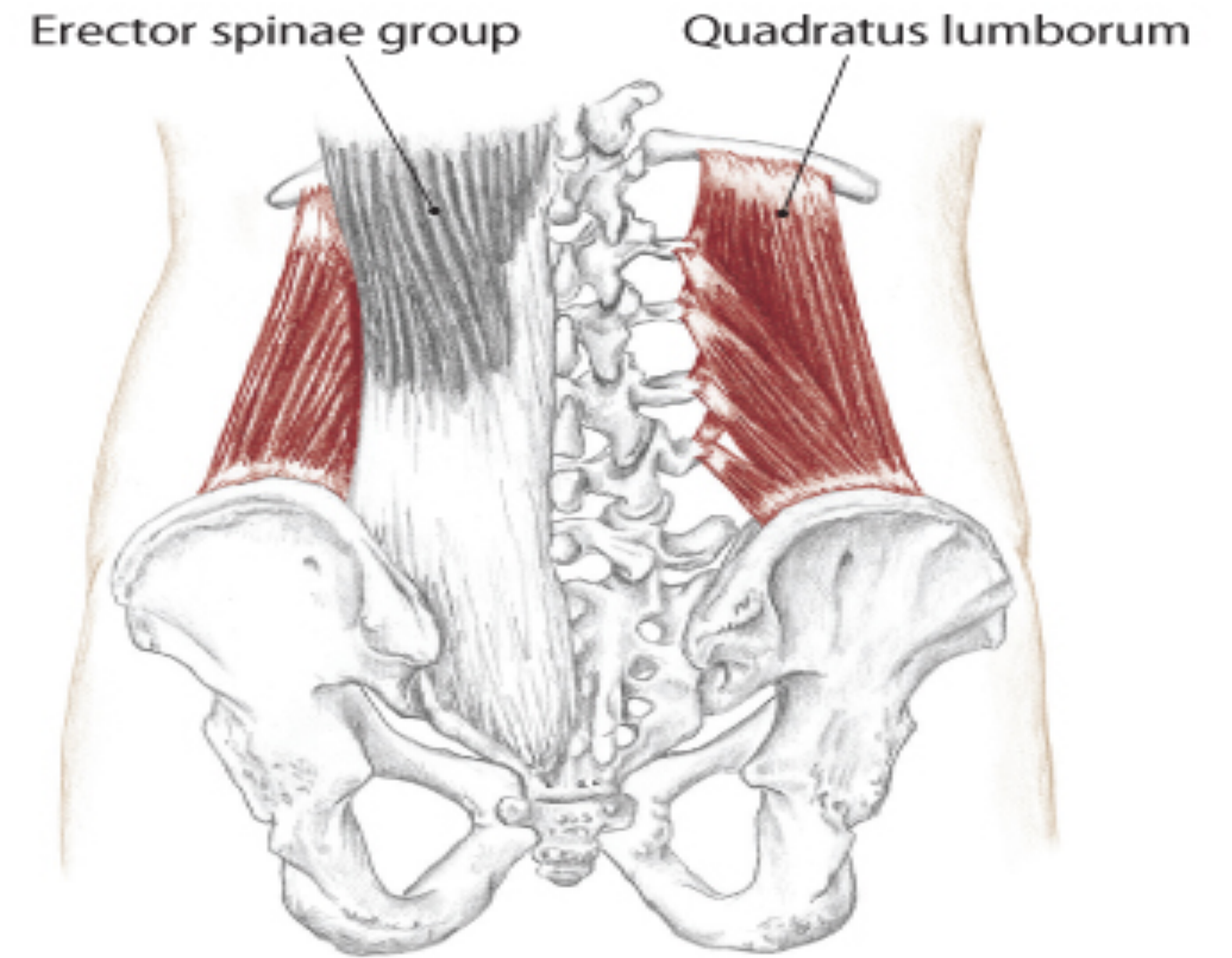
**Transverse  
Abdominus**  
Train,  
transportation

5th - Pyramidalis

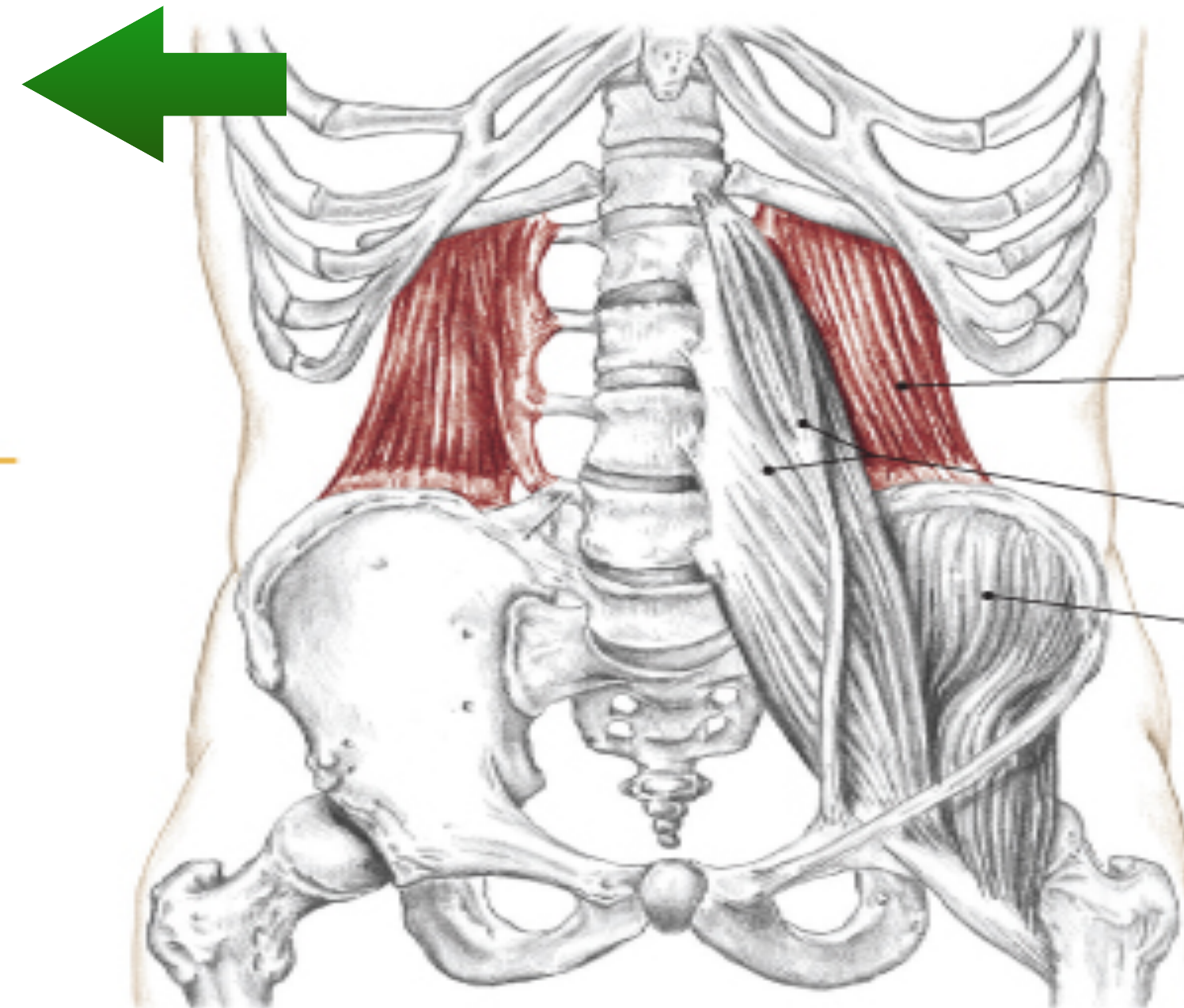
# Quadratus Lumborum

6th Abdominal  
\*deepest\*  
\*\*curtain\*\*

- A** Unilaterally:
  - Laterally tilt** (elevate) the pelvis
  - Laterally flex** the vertebral column to the same side
- Bilaterally:
  - Assist to **extend** the vertebral column
  - Fix** the last rib during forced inhalation and exhalation
- O** Posterior iliac crest
- I** Last rib and transverse processes of first through fourth lumbar vertebrae
- N** Lumbar plexus T12, L1, 2, 3



4.91 Posterior view, erector spinae group removed on right side

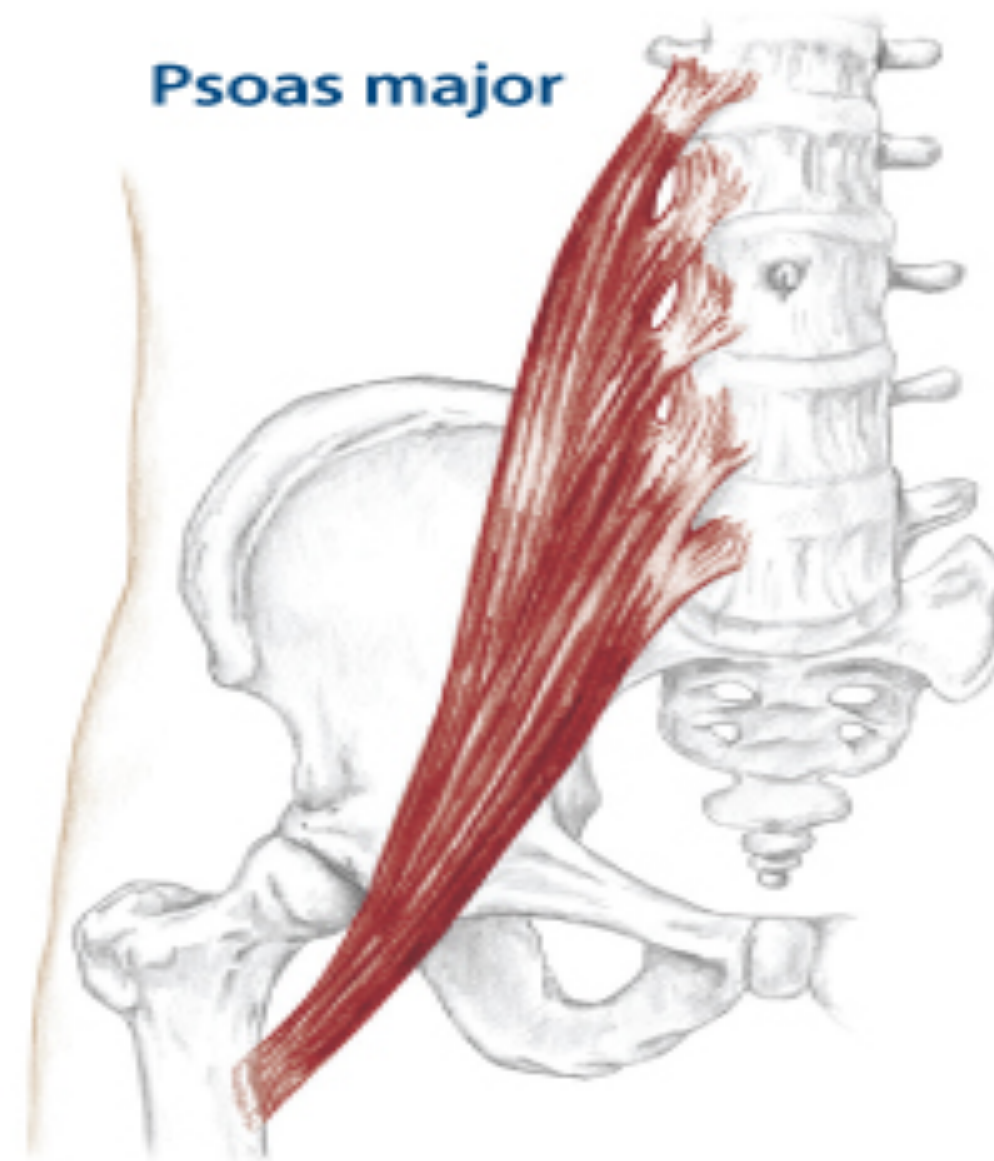


4.92 Anterior view

## Iliopsoas - Common Compensation Muscles

### Psoas Major

- A** *With the origin fixed:*
  - Flex** the hip (coxal joint)
  - May **laterally rotate** the hip (coxal joint)
- With the insertion fixed:*
  - Flex** the trunk toward the thigh
  - Tilt** pelvis anteriorly
- Unilaterally:*
  - Assist to **laterally flex** the lumbar spine
- O** Bodies and transverse processes of lumbar vertebrae
- I** Lesser trochanter
- N** Lumbar plexus L1, 2, 3, 4

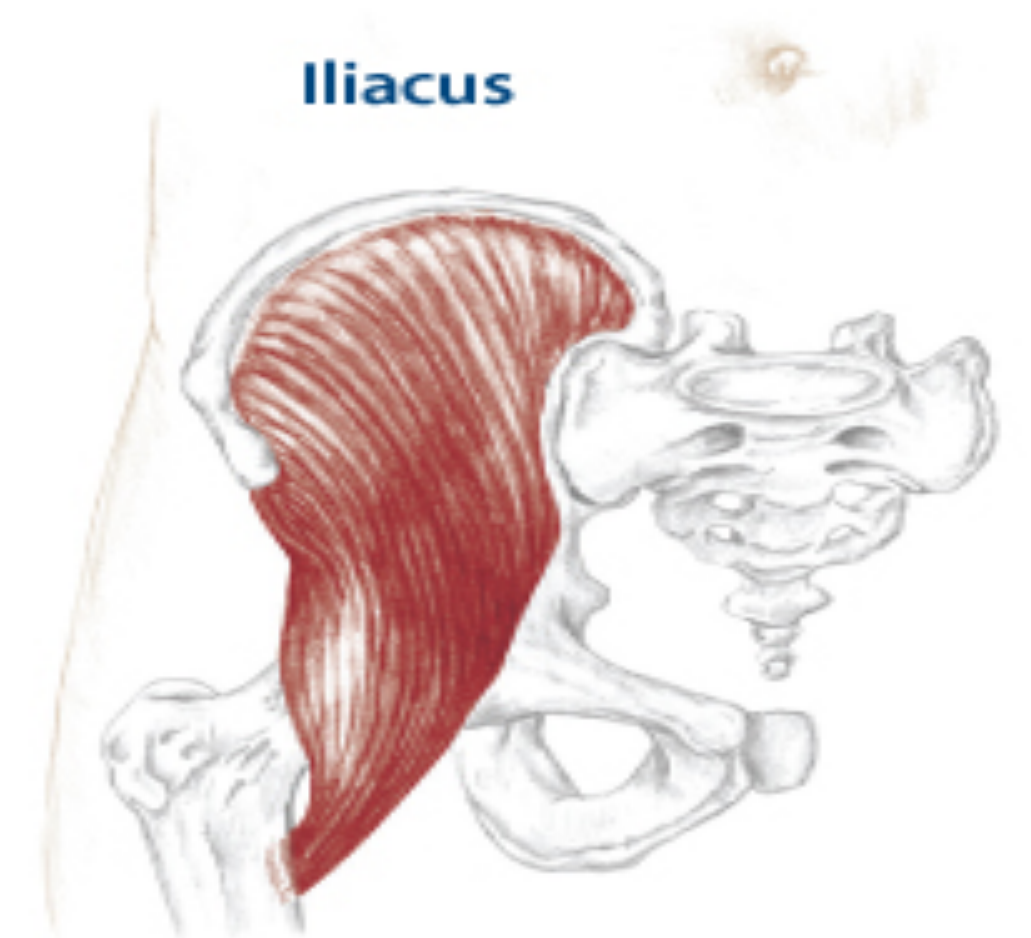


Psoas major

6.127 Anterior view of spine and right hip

### Iliacus

- A** *With the origin fixed:*
  - Flex** the hip (coxal joint)
  - May **laterally rotate** the hip (coxal joint)
- With the insertion fixed:*
  - Flex** the trunk toward the thigh
  - Tilt** pelvis anteriorly
- O** Iliac fossa
- I** Lesser trochanter
- N** Femoral L(1), 2, 3, 4

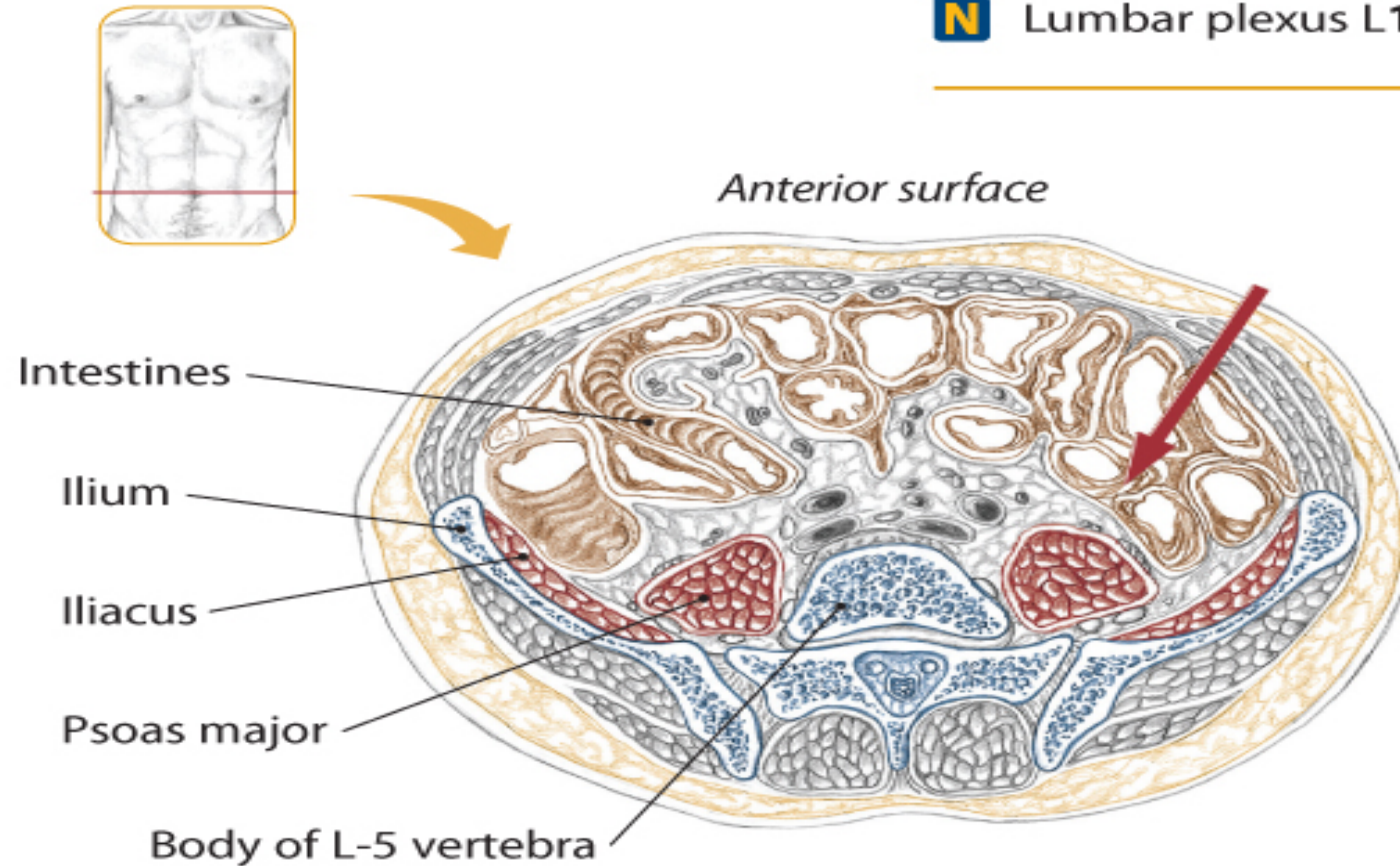
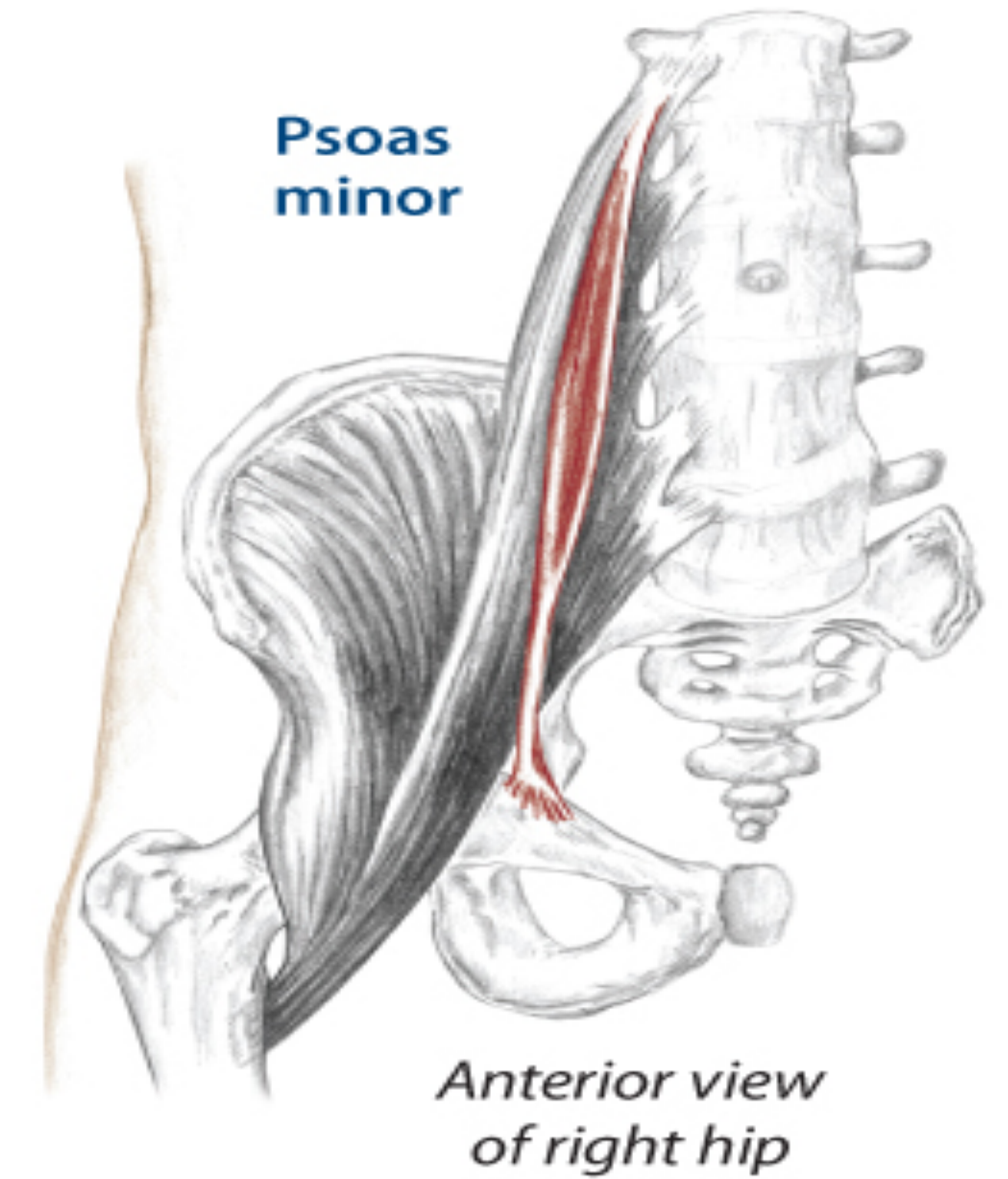


Iliacus

6.128 Anterior view of right hip

## Psoas Minor

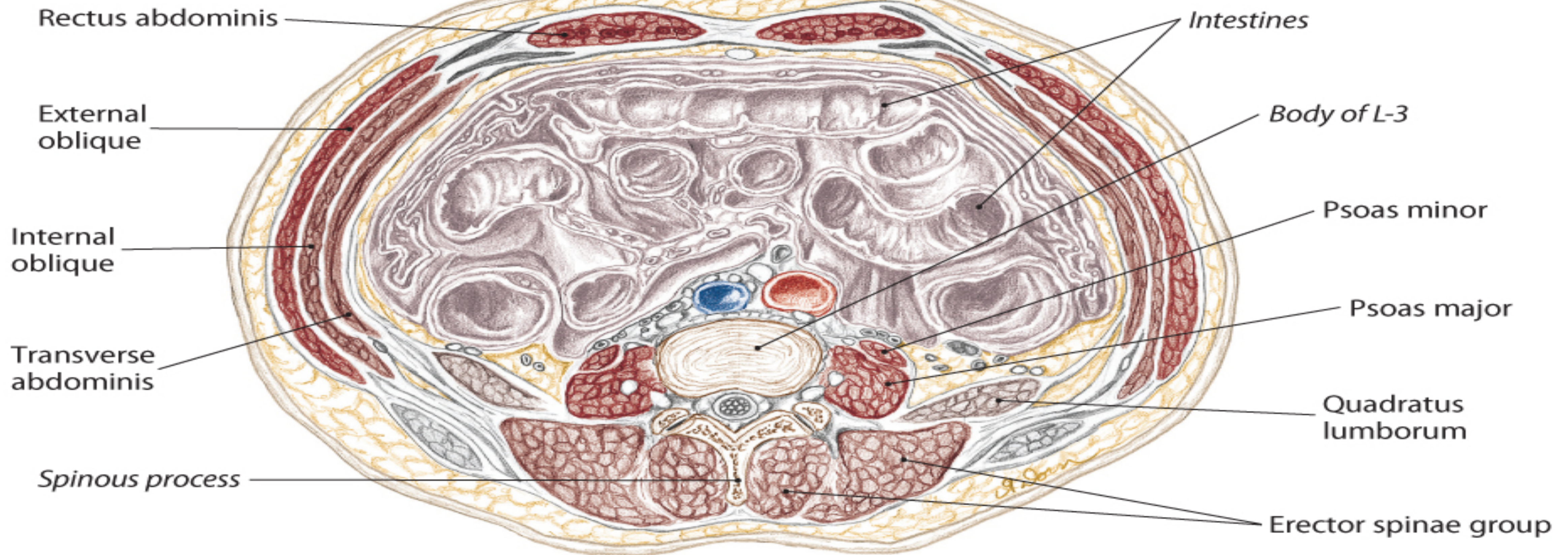
- A** Assist to **create** lordotic curvature in the lumbar spine
- Tilt** pelvis posteriorly
- O** Body and transverse process of first lumbar vertebra
- I** Superior ramus of pubis
- N** Lumbar plexus L1, 2



**6.130** Cross section of the trunk at the level of L-5, arrow showing direction of fingers when accessing the psoas major

## Cross Section of the Thorax Superficial Layers

Anterior surface



**4.59** Cross section of the abdomen at the level of the third lumbar vertebra

## Diaphragm

**\*\*Frames the ribs\*\***

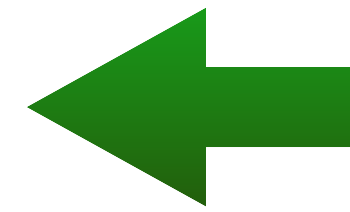
**A** Draw down the central tendon of the diaphragm

Increase the volume of the thoracic cavity during inhalation

**O** Costal attachment:  
Inner surface of lower six ribs

Lumbar attachment:  
Upper two or three lumbar vertebrae

Sternal attachment:  
Inner part of xiphoid process

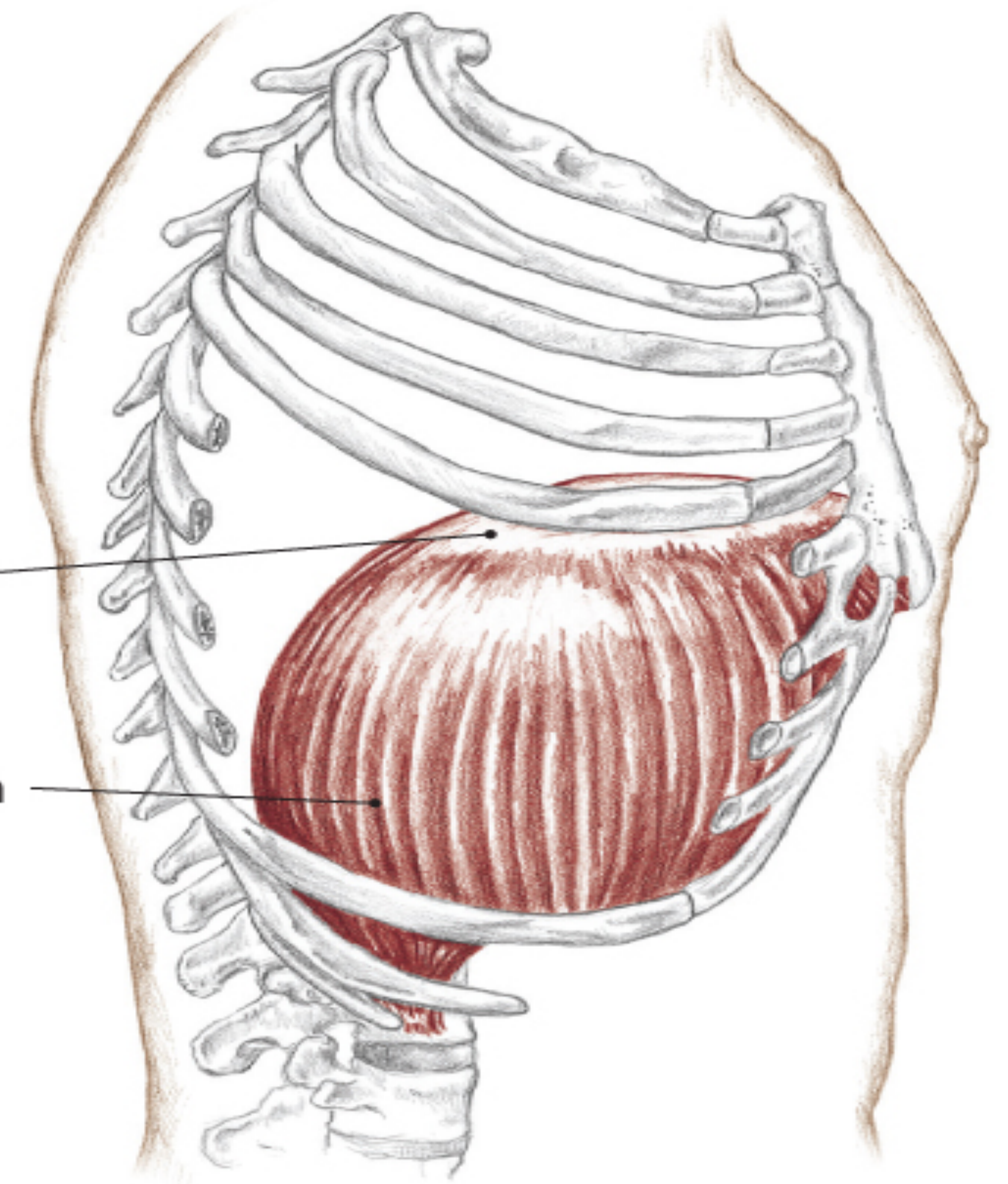


**I** Central tendon

**N** Phrenic C3, 4, 5

Central tendon

Diaphragm



**4.108** Lateral view of thorax showing diaphragm in position of exhalation

# Intercostals **\*\*In between the ribs (cost a lot)\*\***

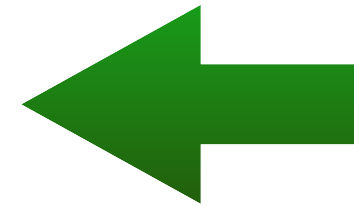
**A** *External Intercostals:*  
Draw the ribs superiorly (increasing the space of the thoracic cavity) to assist with **inhalation**

*Internal Intercostals:*  
Draw the ribs inferiorly (decreasing the space of the thoracic cavity) to assist with **exhalation**

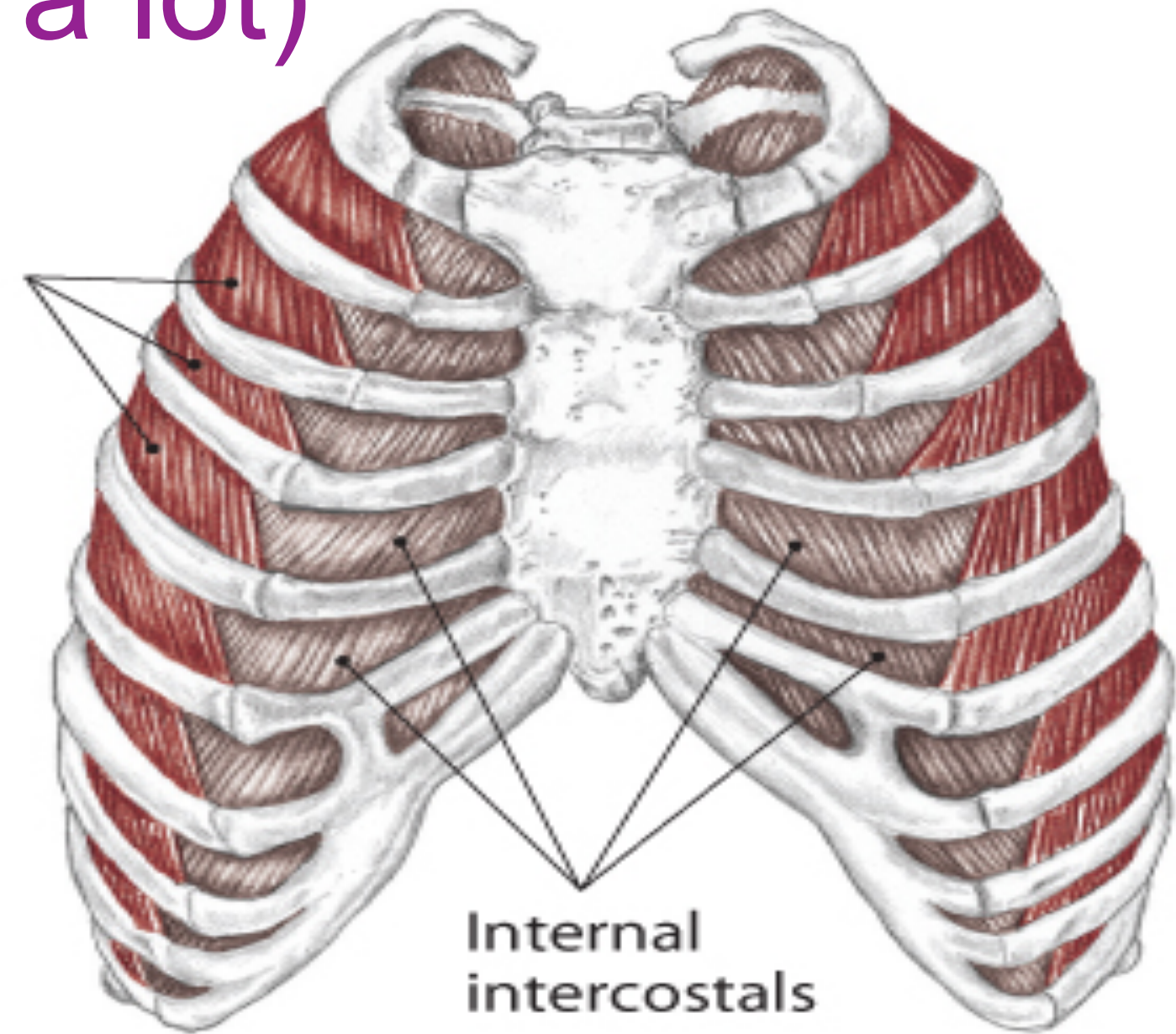
**O** Inferior border of the rib above

**I** Superior border of the rib below

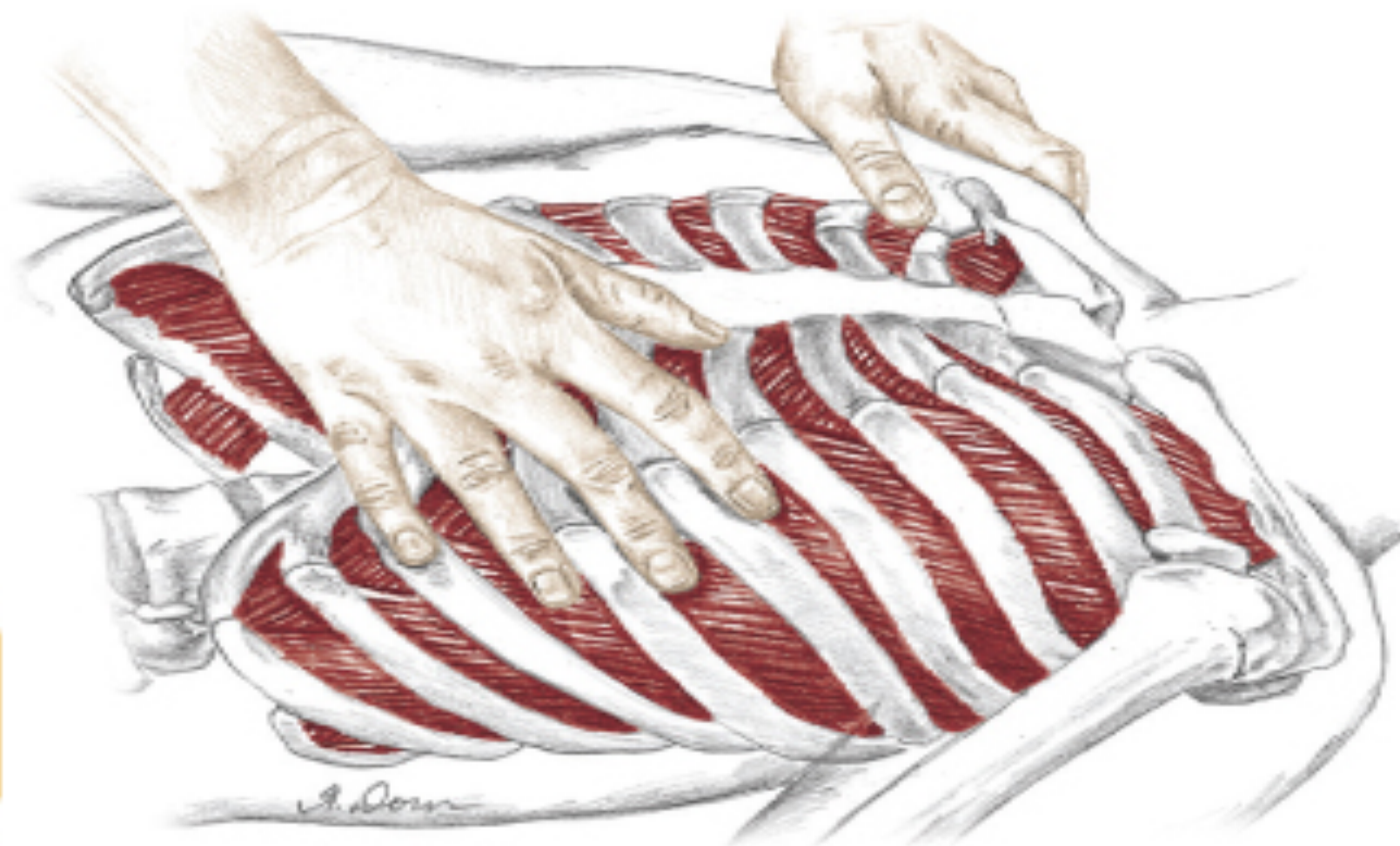
**N** Thoracic



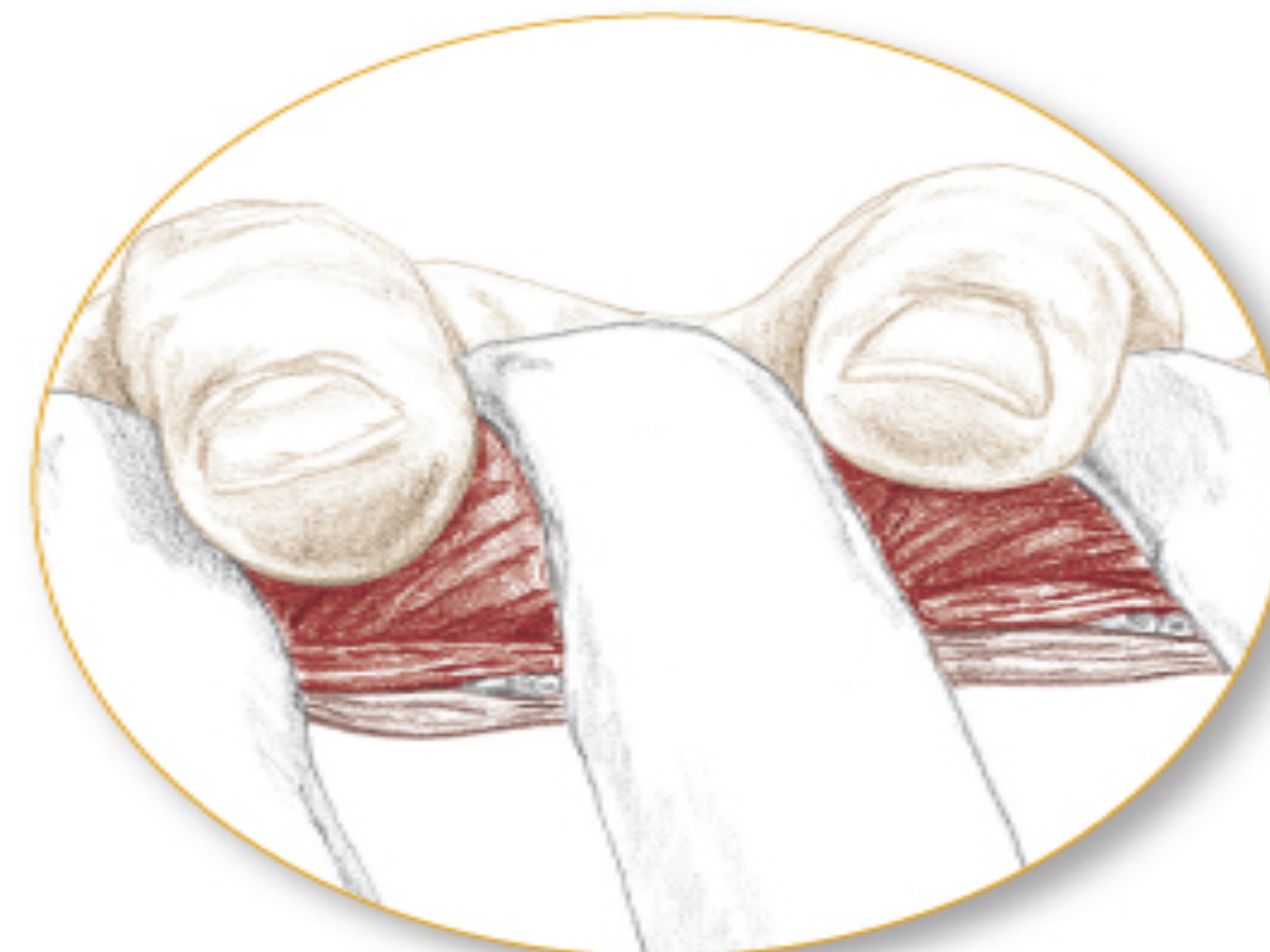
External intercostals



4.112 Anterior view of rib cage



4.113 Partner supine



Cross section of palpating intercostals





# Posterior Core Muscles



Orange: Ilicostalis

Blue: Longissimus

Yellow: Semispinalis

Pink: Multifidus

Purple: Rotatores

Red: Interspinalis

Green: Intertransversarii

# Movement & Exercise

Origin and Insertion approximating with each other

Free-Write : 5 minutes

What do your abs and core want to say to you today?

Watch Andy teach the Spine  
and get a *guided visualization*.



[www.BeverlyHosford.com/spine](http://www.BeverlyHosford.com/spine)

Images courtesy of Trail Guide to the Body  
and  
Andy the Skeleton

@askandytheskeleton



**STAY IN TOUCH!!!**

Please rate the session in your mobile device