

#ideaworld



LIMITLESS

The Anatomy of the Pilates Powerhouse

PRESENTED BY

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- ACE Personal Trainer
- Fit Pro for 20 years
- Anatomy teacher
- Sleep specialist
- Mama of two boys
- Ski, hike, bike in Montana
- Gardening & cooking

Guided Visualization

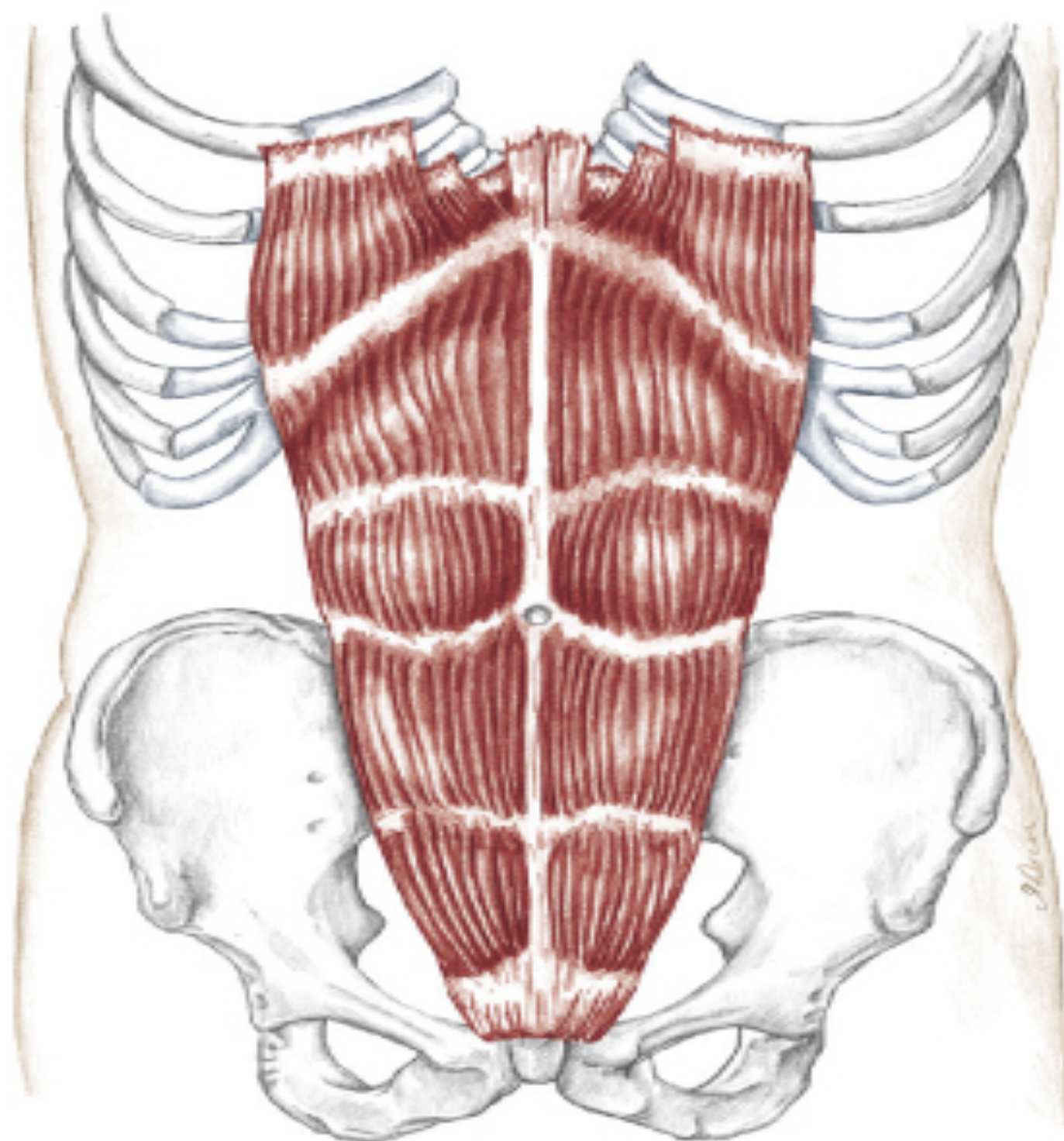
Anatomy for the Pilates Professional with Sara Grout



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

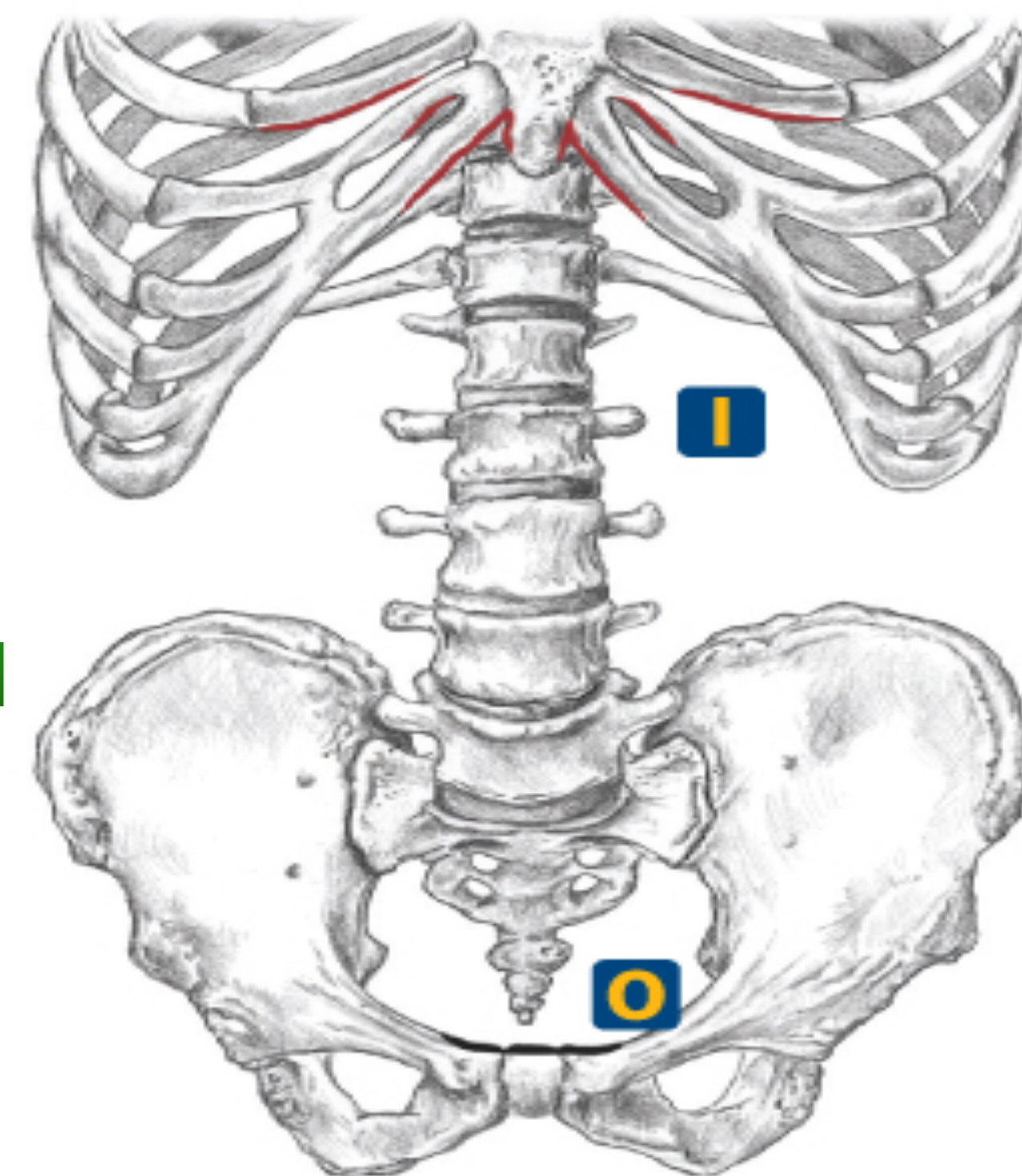
Abdominals - Anterior Muscles



4.98 Anterior view of rectus abdominis

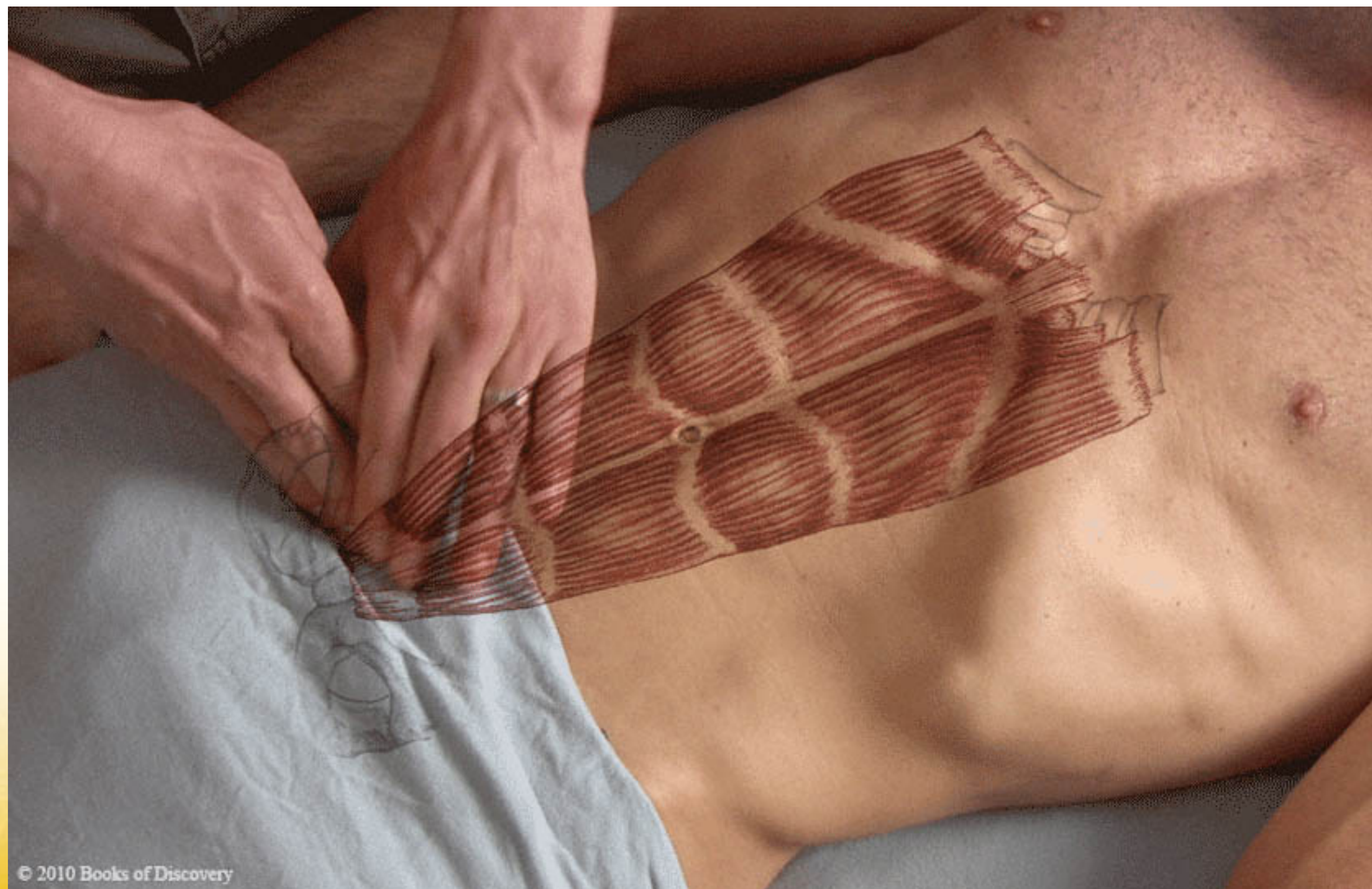
Rectus Abdominis

- 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

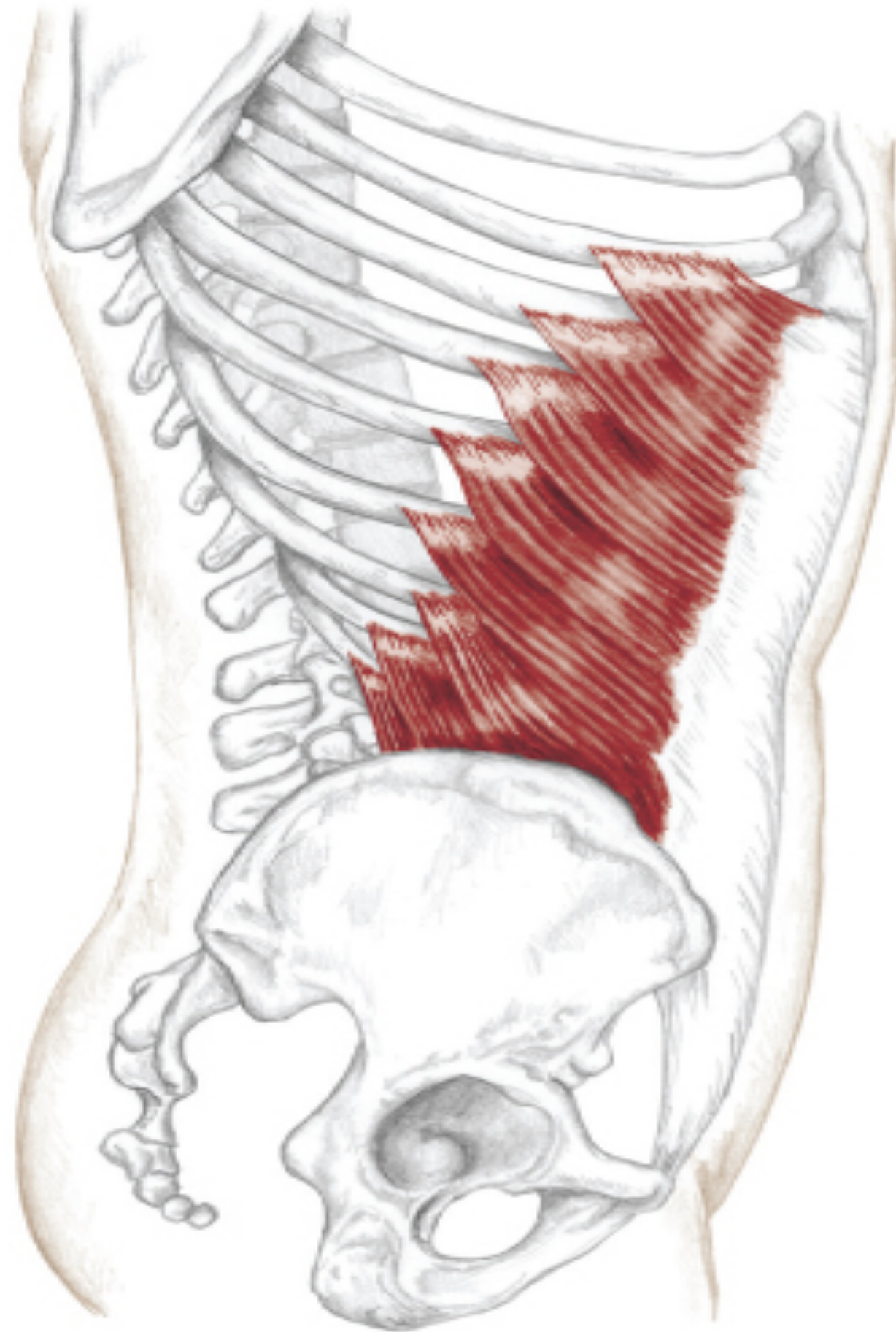


4.99 Anterior view showing origin and insertion

Rectus abdominus



Abdominals - Anterior Muscles



4.100 Lateral view of external oblique

External Oblique

A Unilaterally:
Laterally flex vertebral column to the same side

Rotate vertebral column to the opposite side

Bilaterally:

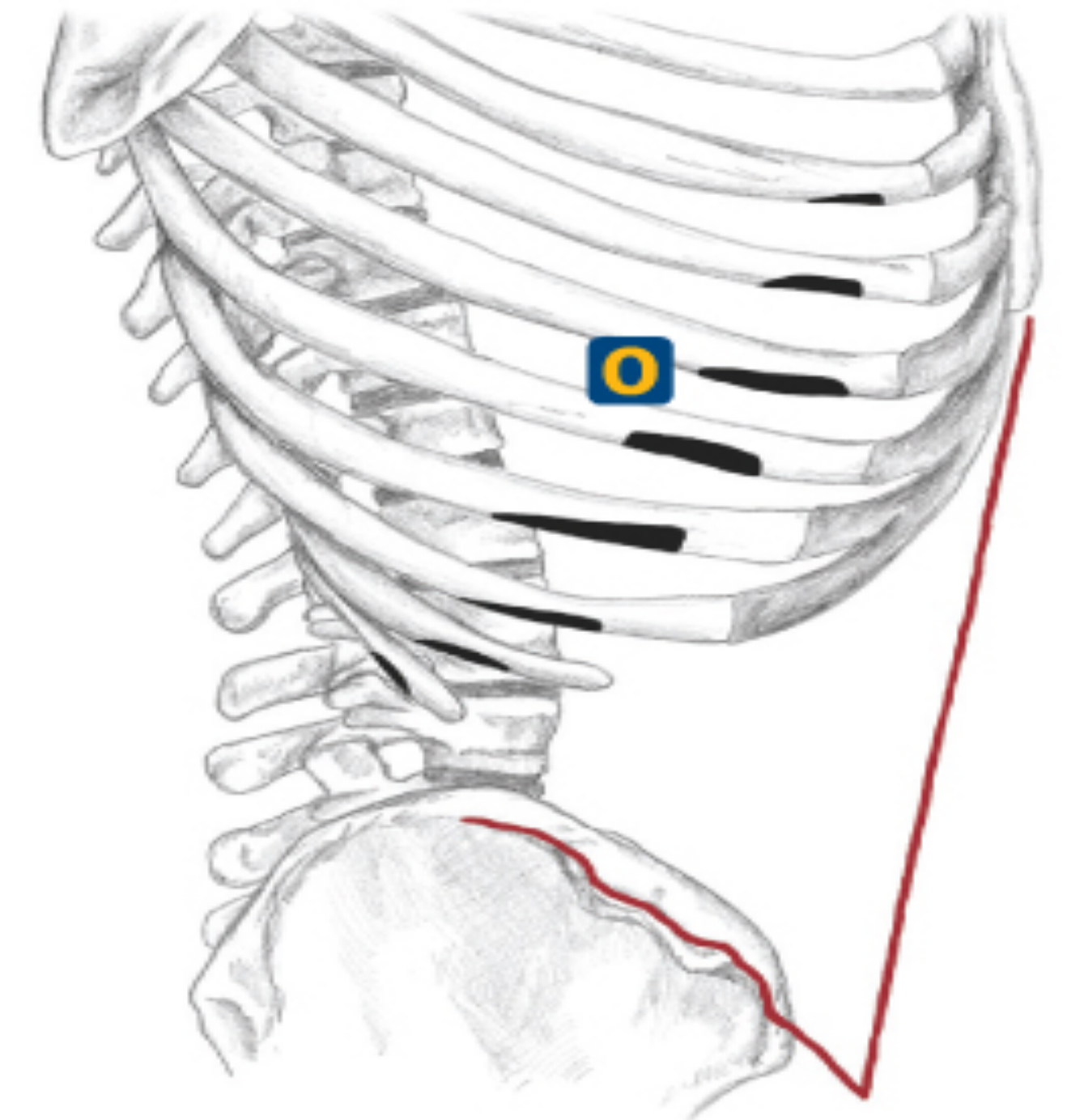
Flex the vertebral column

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

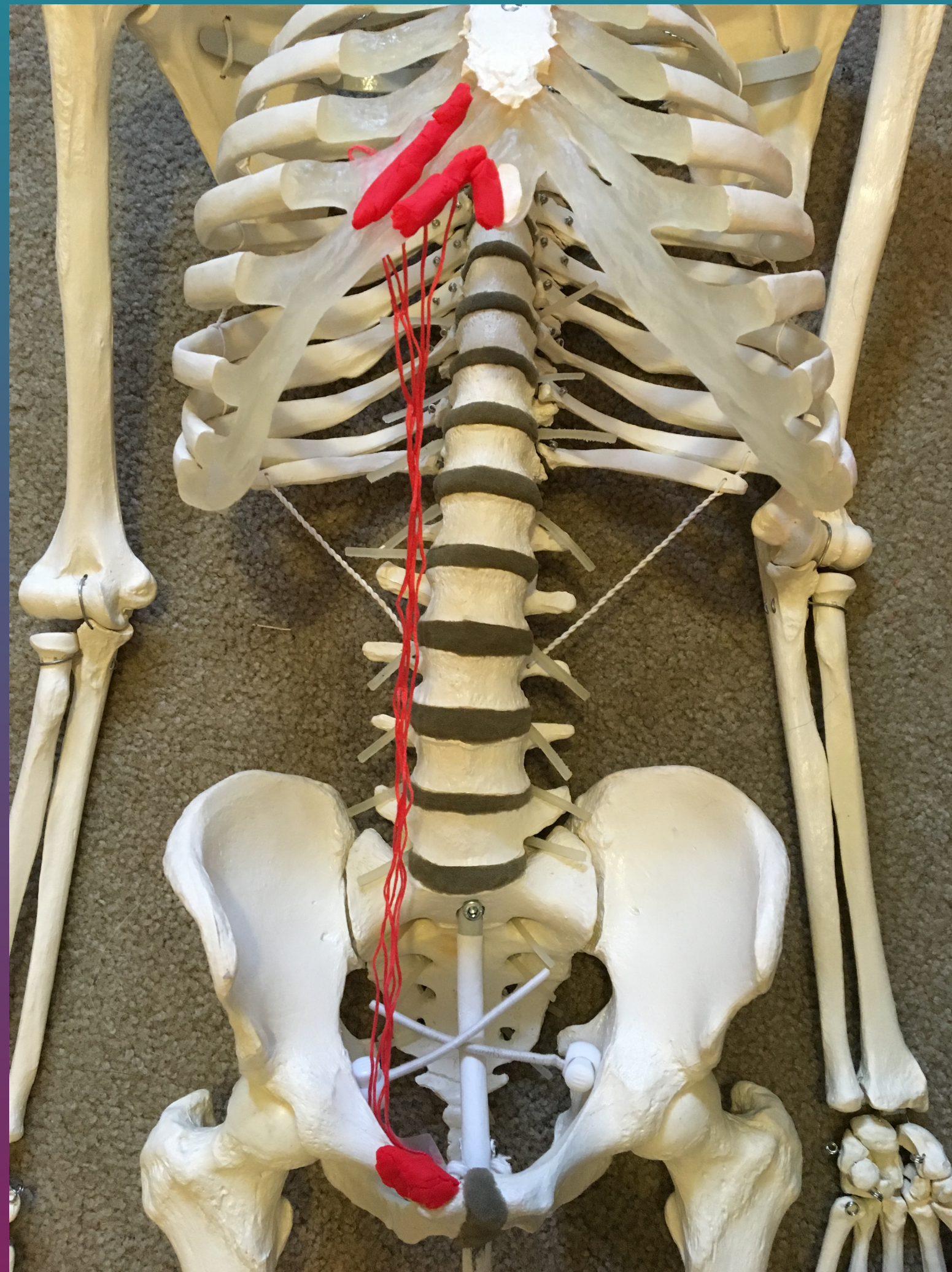


4.101 Lateral view showing origin and insertion

External oblique



Find on yourself & partner



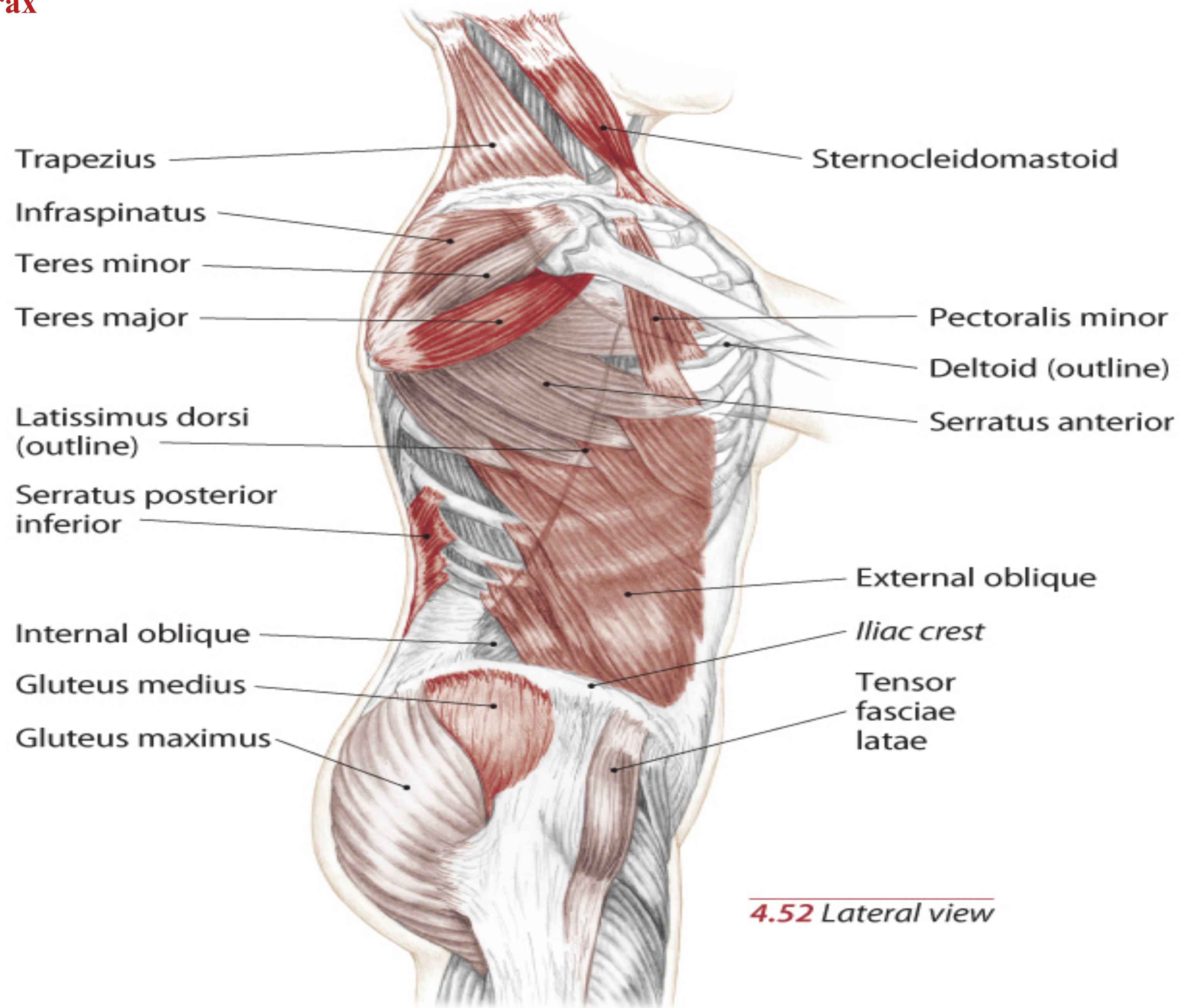
Rectus Abdominus



External Oblique

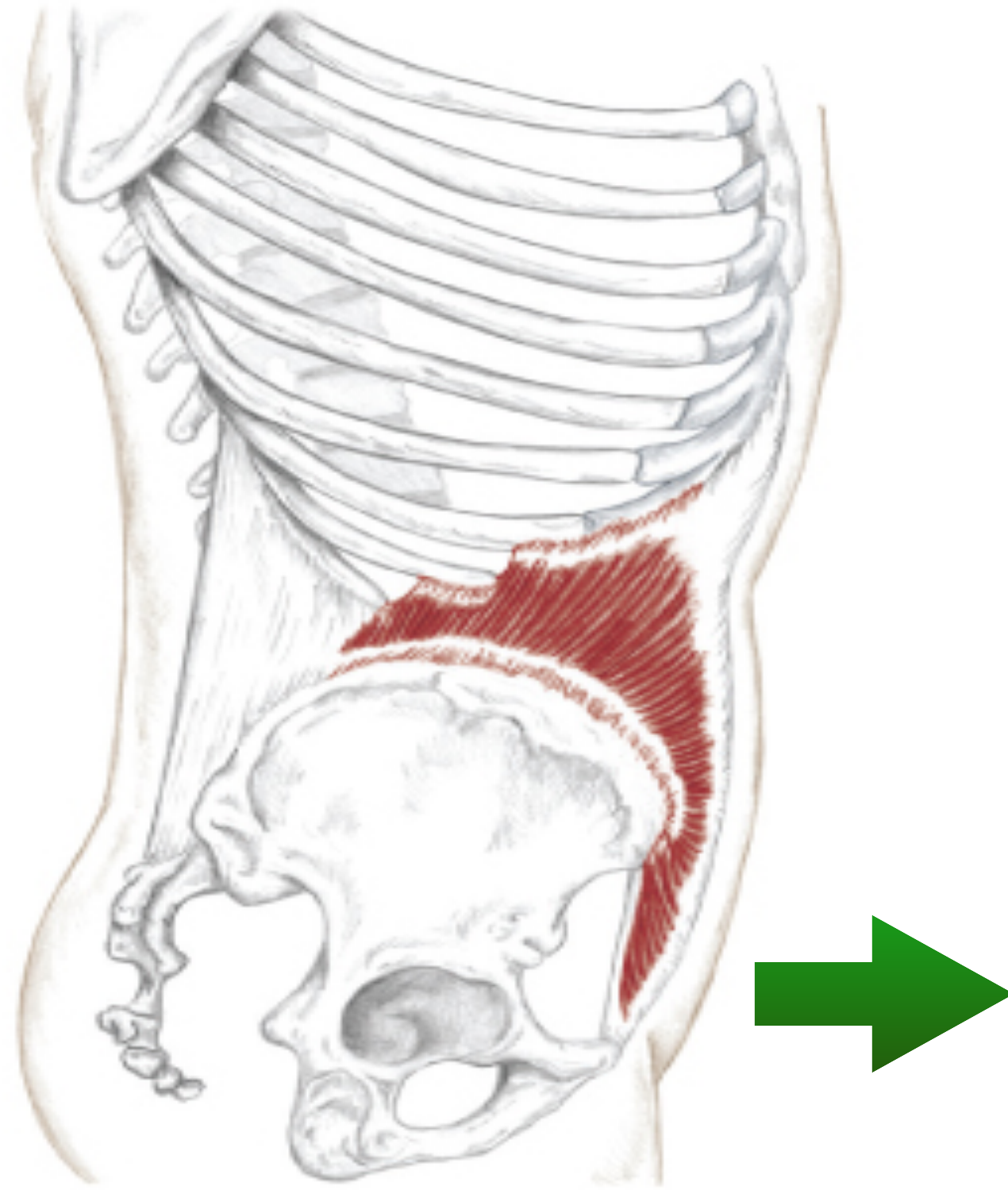
Muscles of the Spine and Thorax

Lateral View



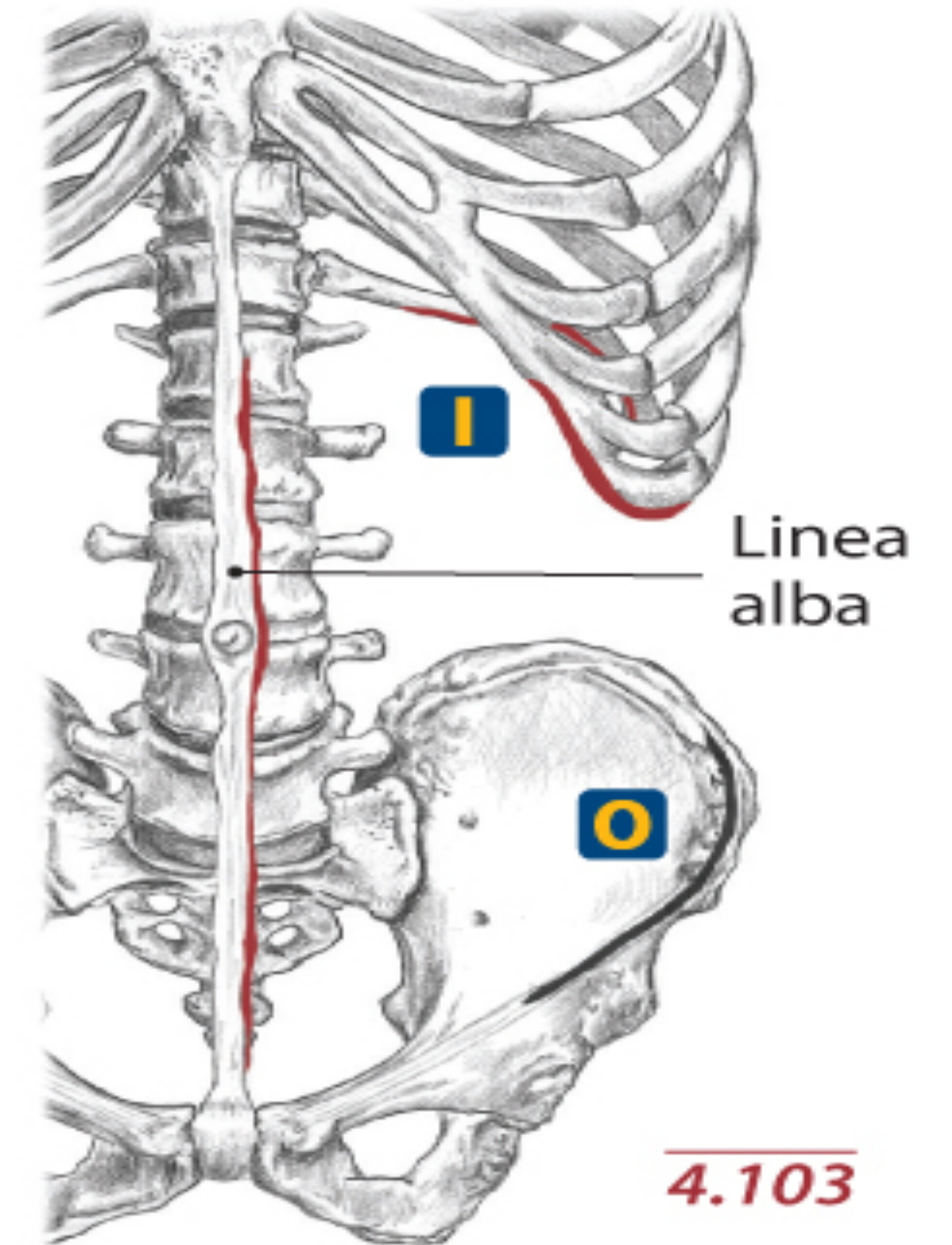
4.52 Lateral view

Internal Oblique

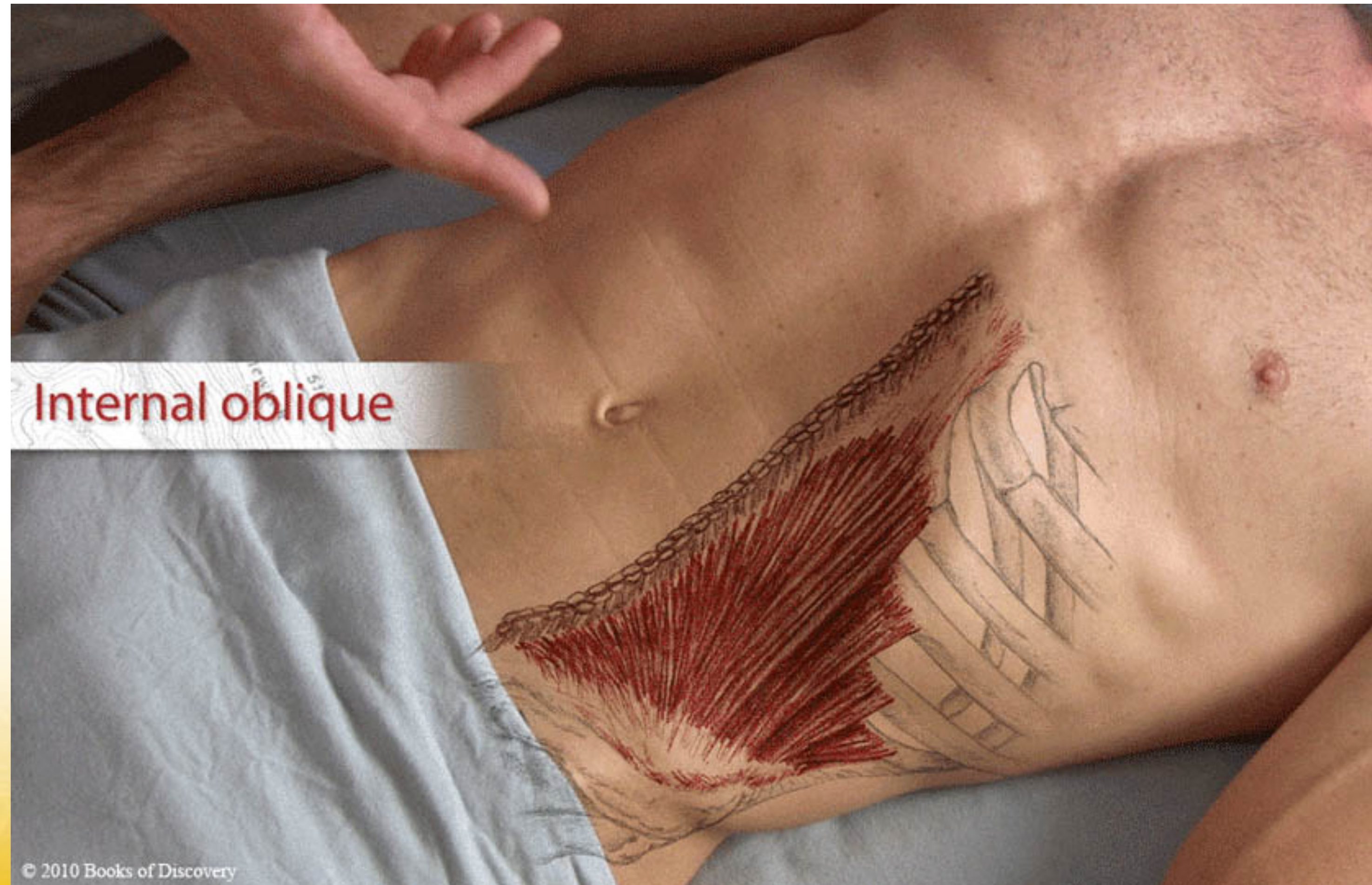


4.102 Lateral view of internal oblique

- 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



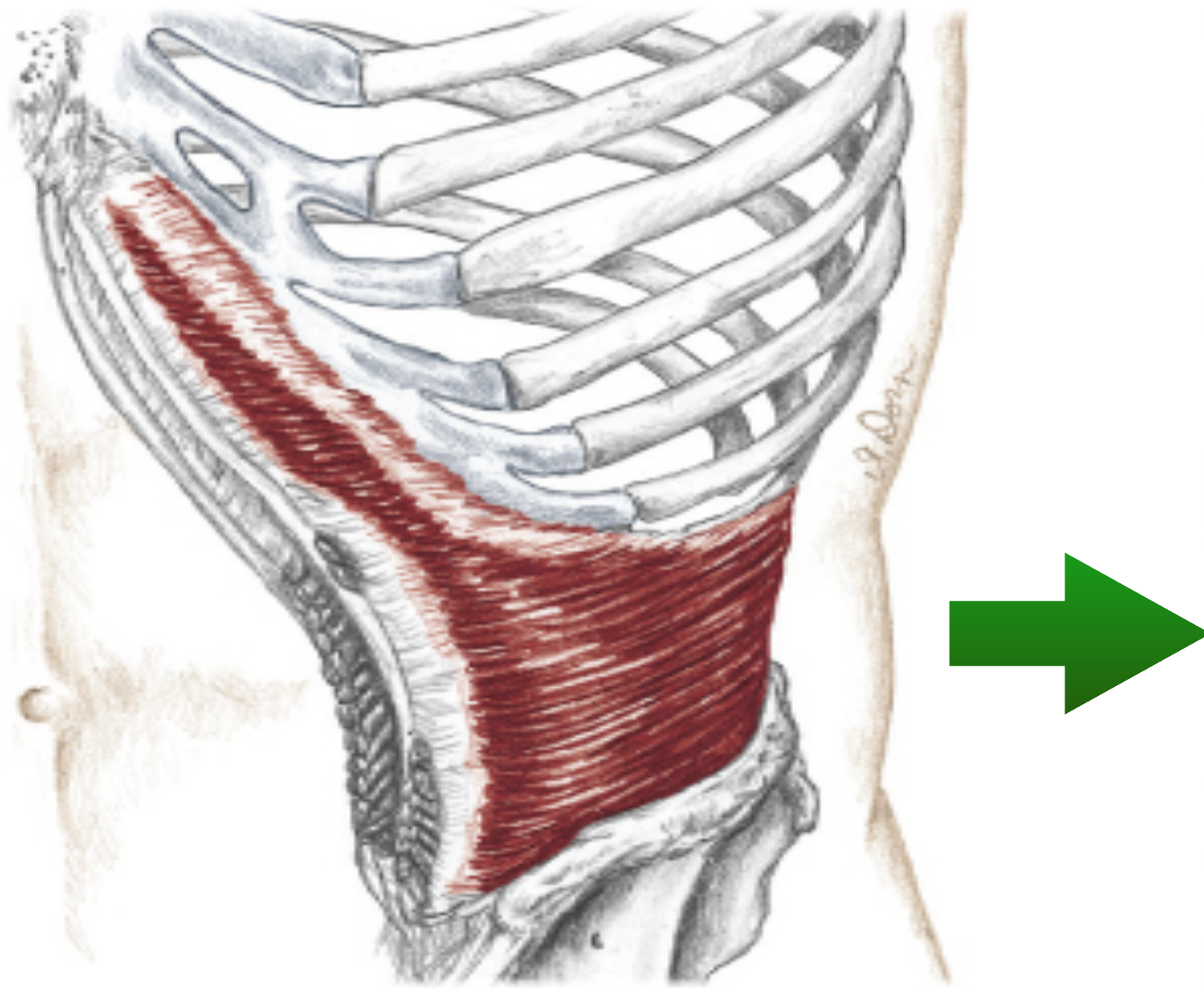
Find on yourself & partner



Yellow: Internal Oblique

Abdominal Ribbons

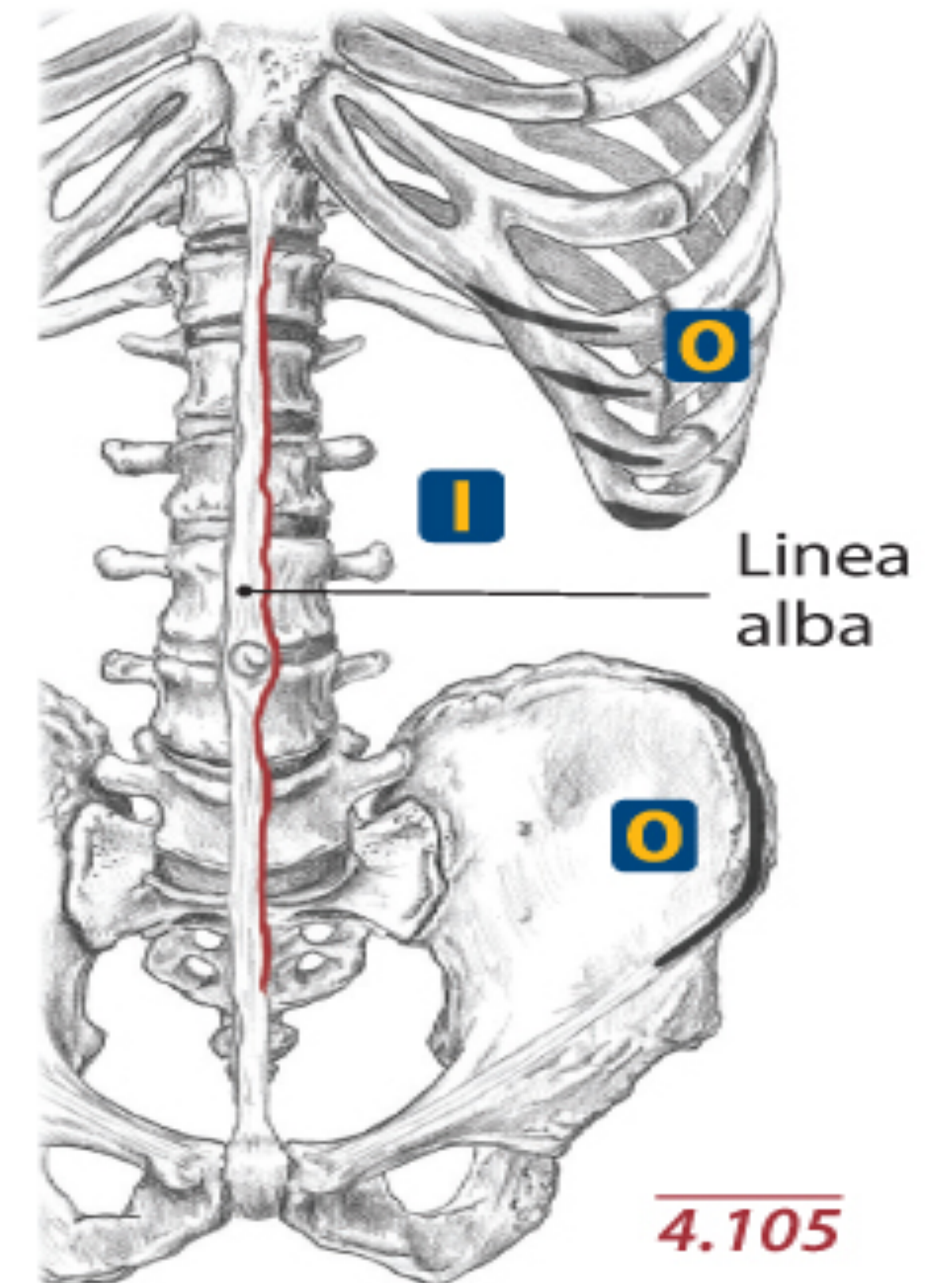




4.104 Anterior view of transverse abdominis (both obliques cut and reflected)

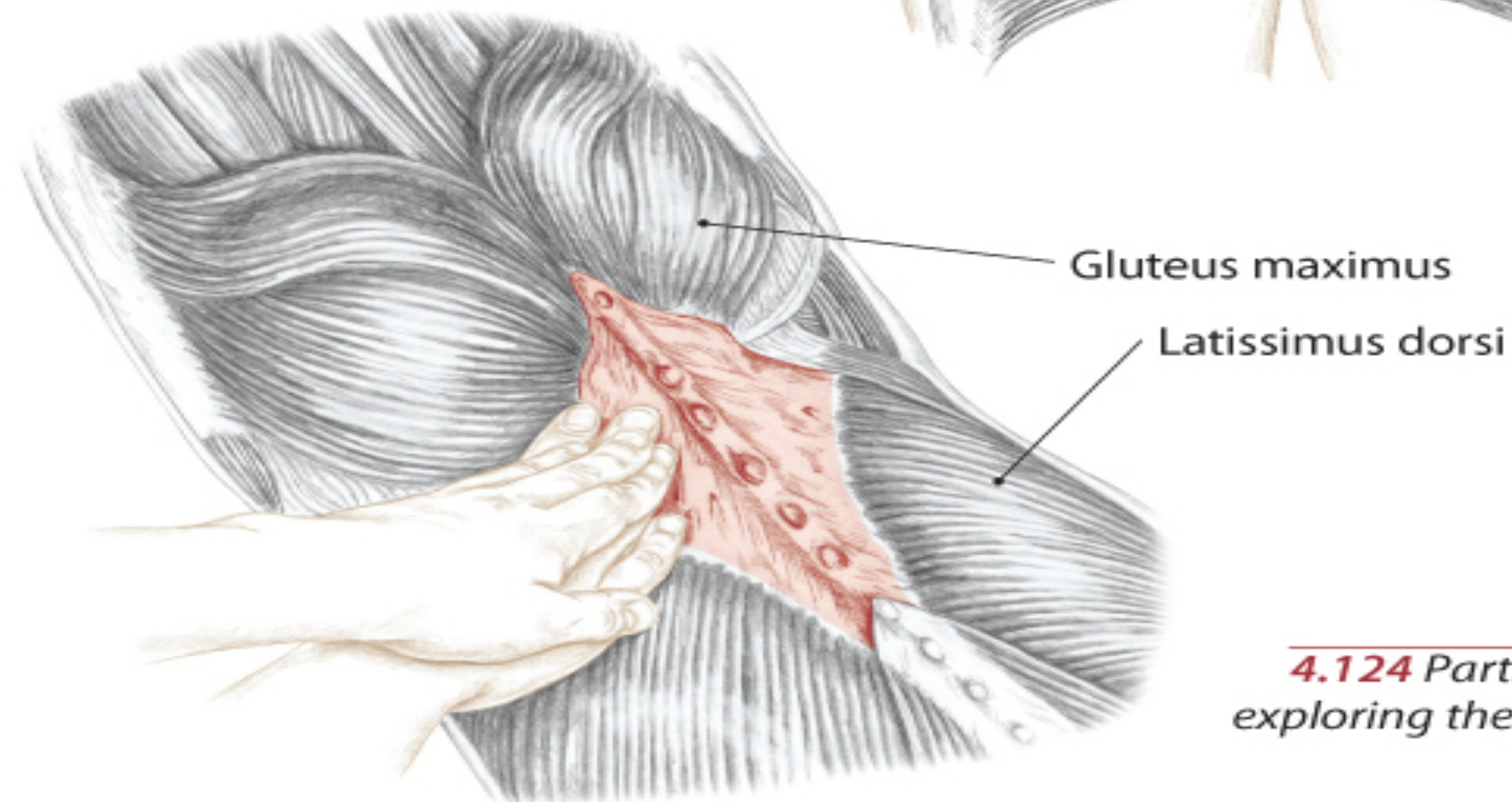
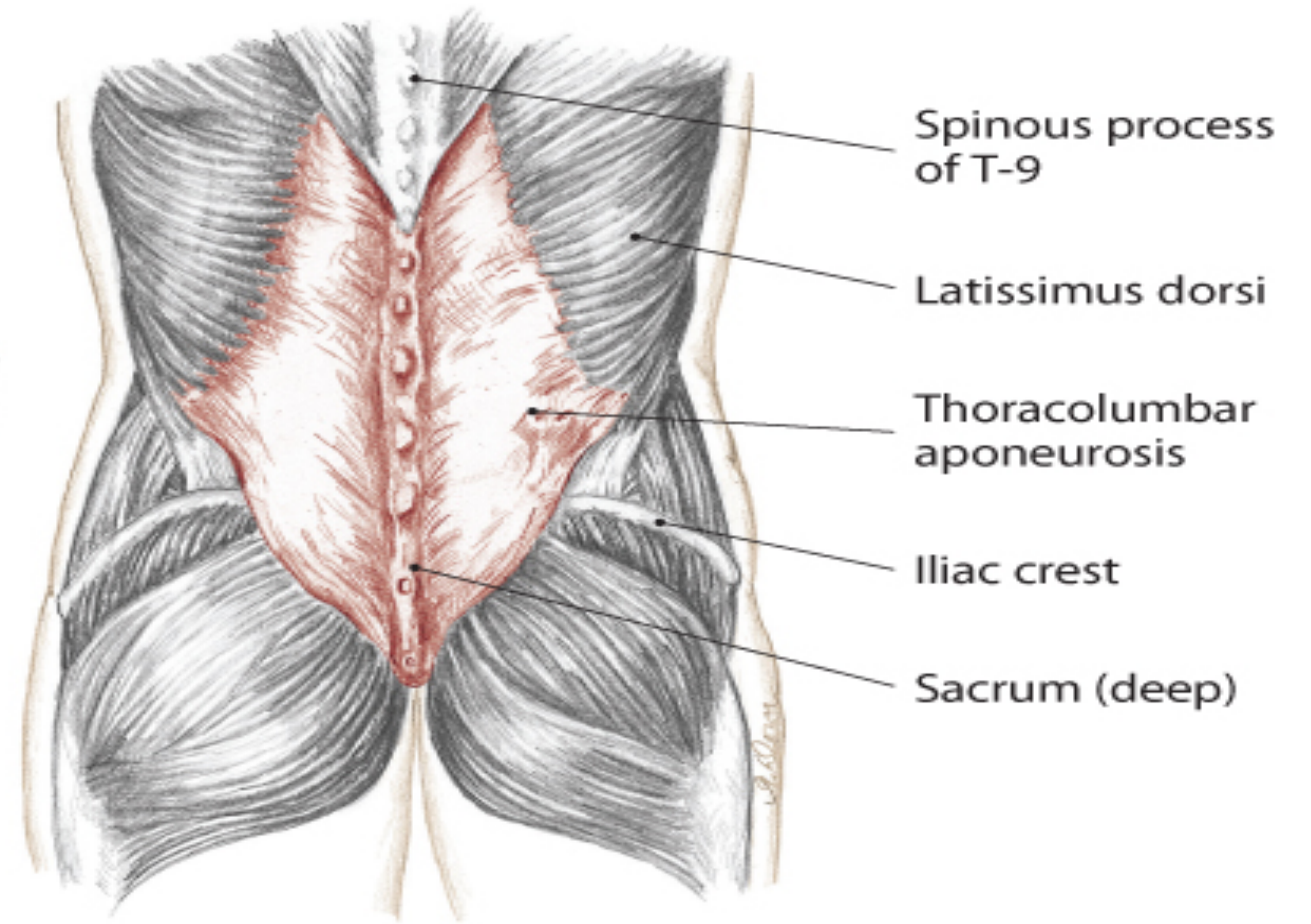
Transverse Abdominis

- 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
-



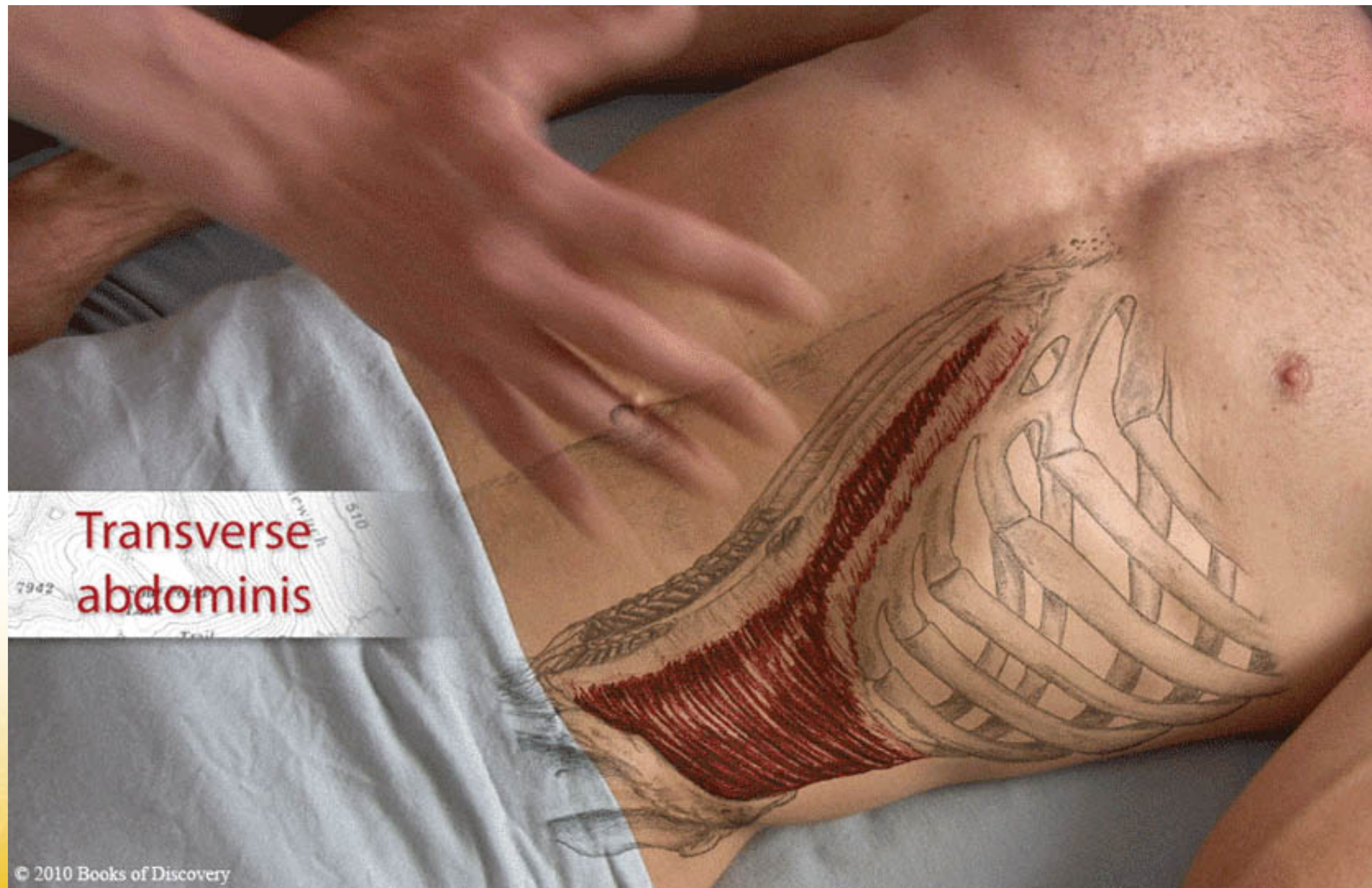
Thoracolumbar Aponeurosis

4.123 Posterior view of lower thorax and pelvis



4.124 Partner prone, exploring the aponeurosis

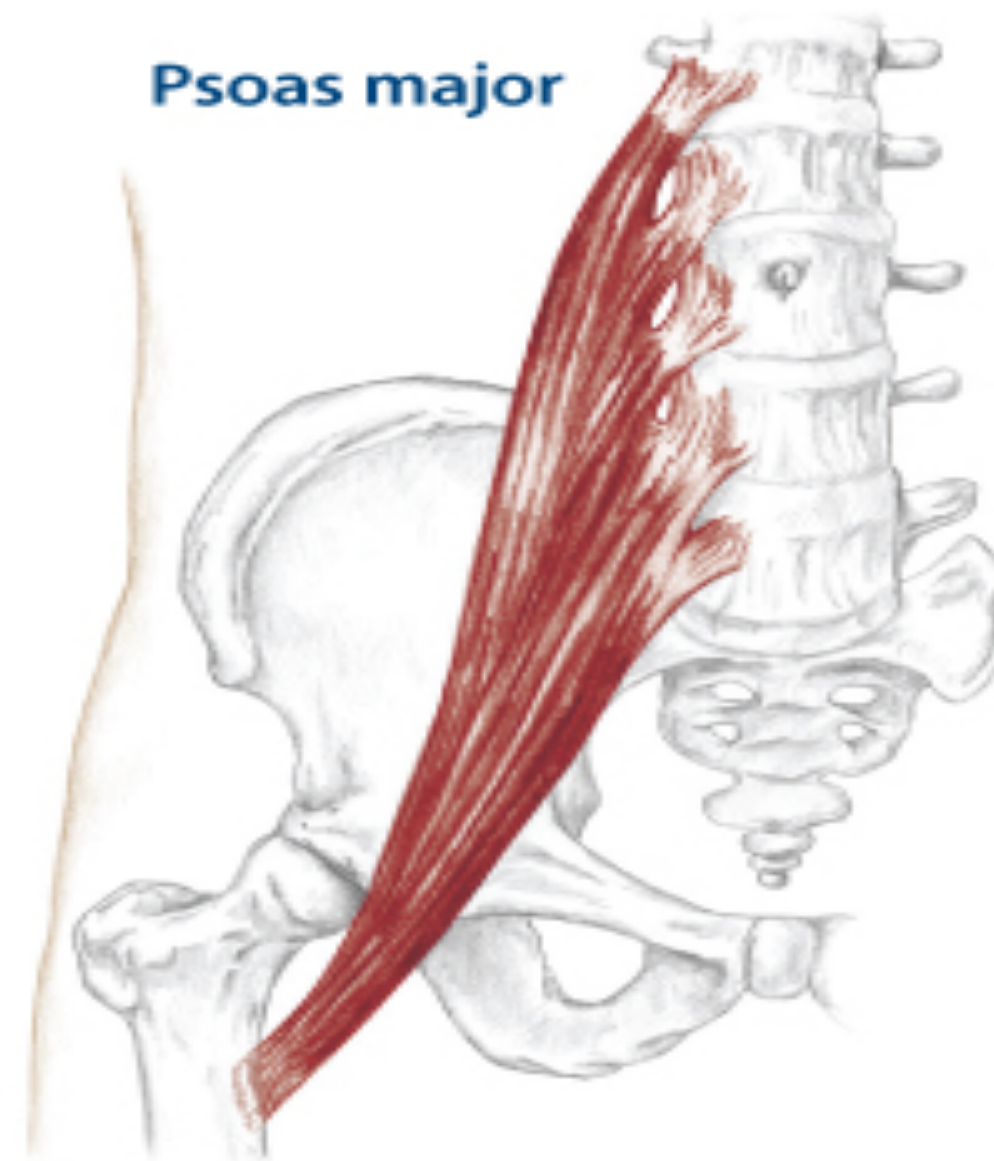
Transverse abdominis



Iliopsoas - Common Compensation Muscles

Psoas Major

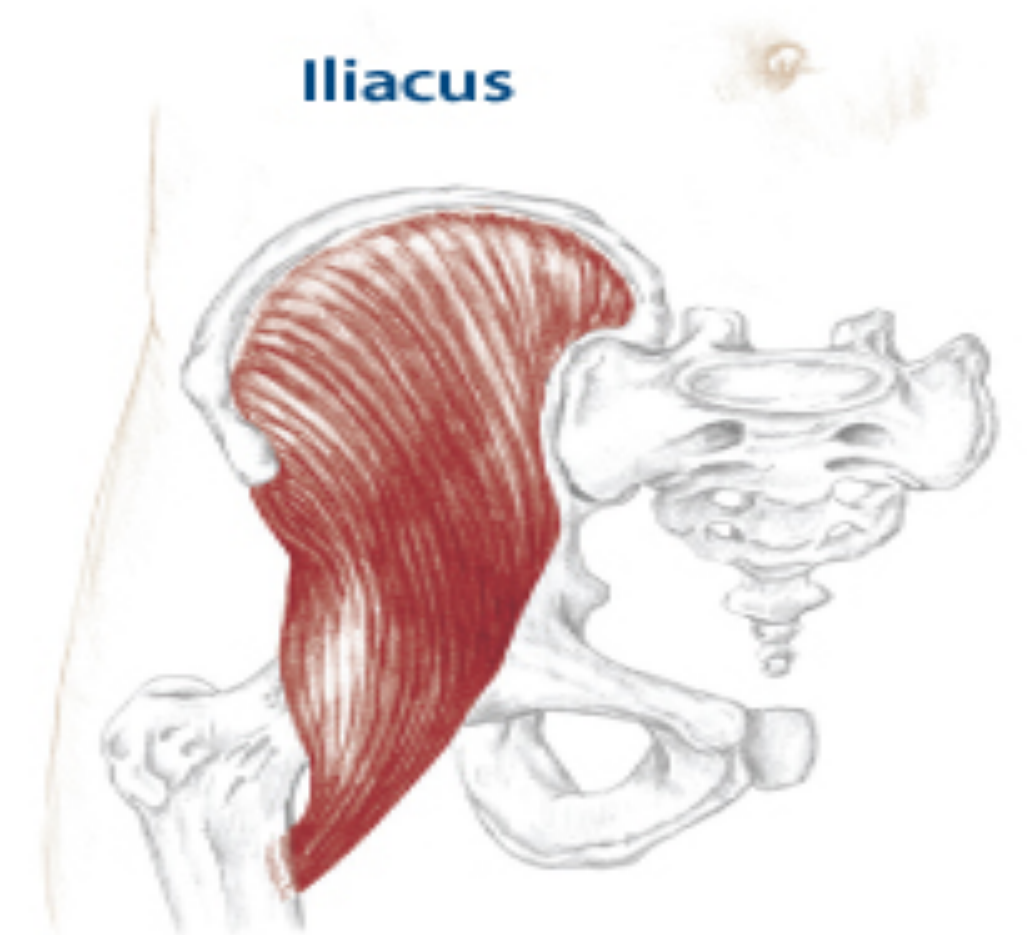
- A** *With the origin fixed:*
 - Flex** the hip (coxal joint)
 - May **laterally rotate** the hip (coxal joint)
- With the insertion fixed:*
 - Flex** the trunk toward the thigh
 - Tilt** pelvis anteriorly
- Unilaterally:*
 - Assist to **laterally flex** the lumbar spine
- O** Bodies and transverse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



6.127 Anterior view of spine and right hip

Iliacus

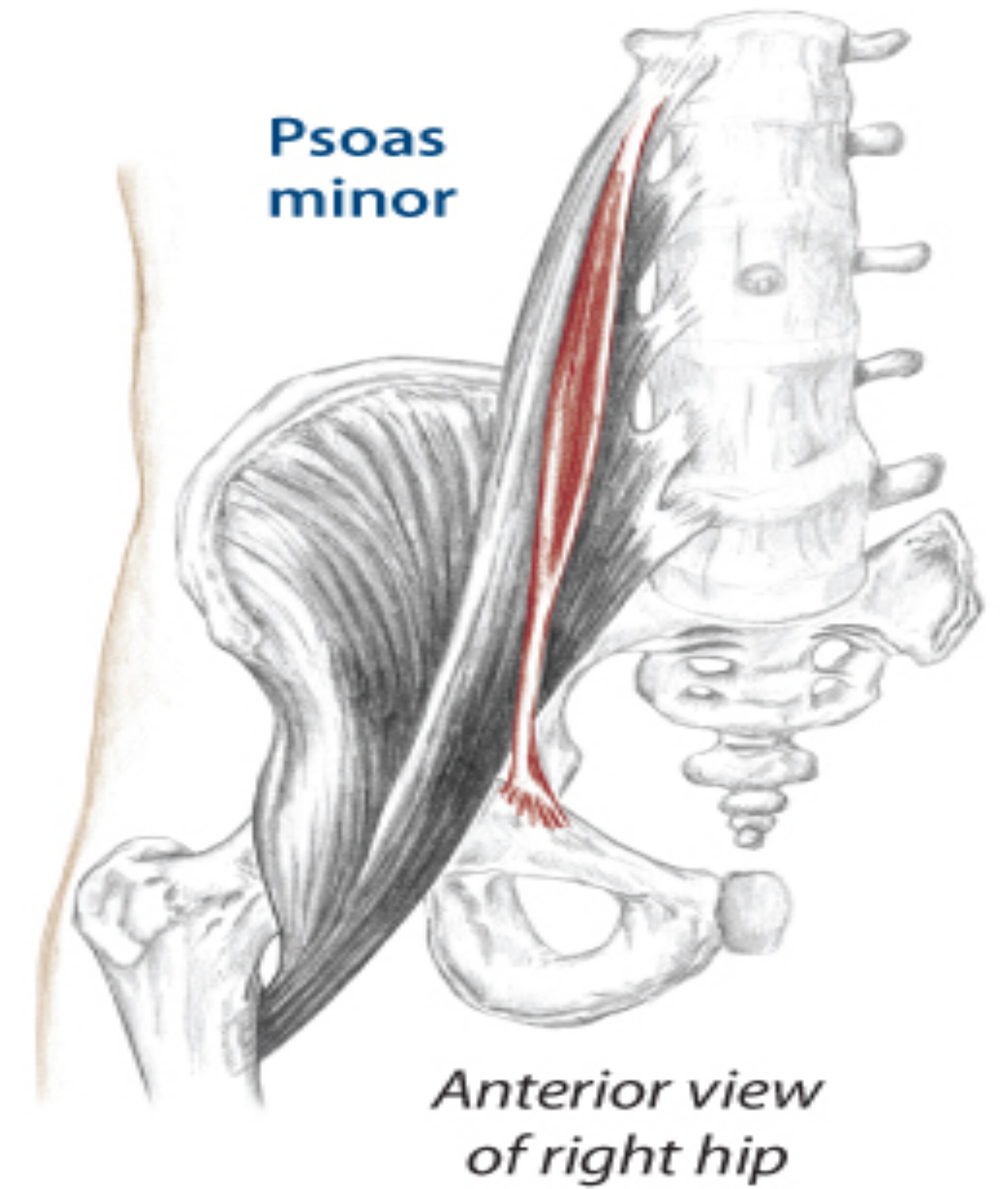
- A** *With the origin fixed:*
 - Flex** the hip (coxal joint)
 - May **laterally rotate** the hip (coxal joint)
- With the insertion fixed:*
 - Flex** the trunk toward the thigh
 - Tilt** pelvis anteriorly
- O** Iliac fossa
- I** Lesser trochanter
- N** Femoral L(1), 2, 3, 4



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



Anterior surface

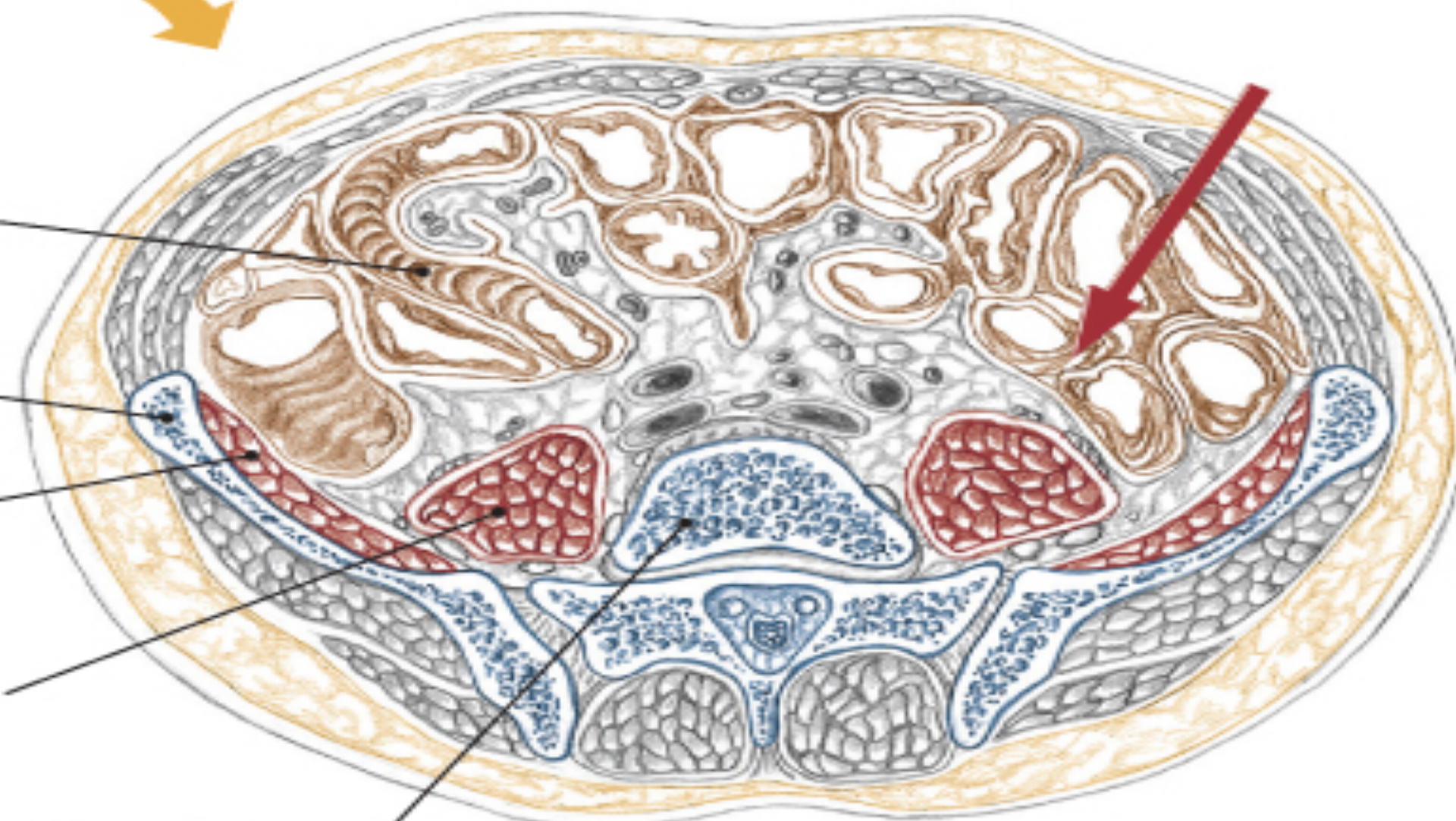
Intestines

Ilium

Iliacus

Psoas major

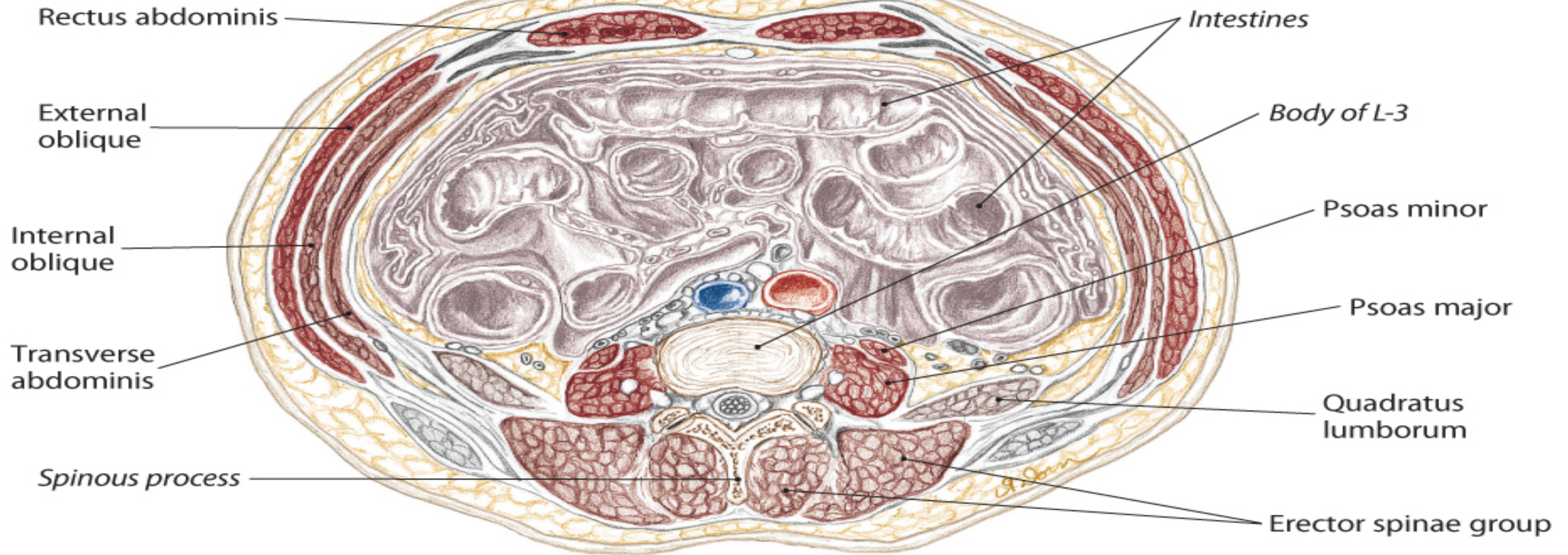
Body of L-5 vertebra



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

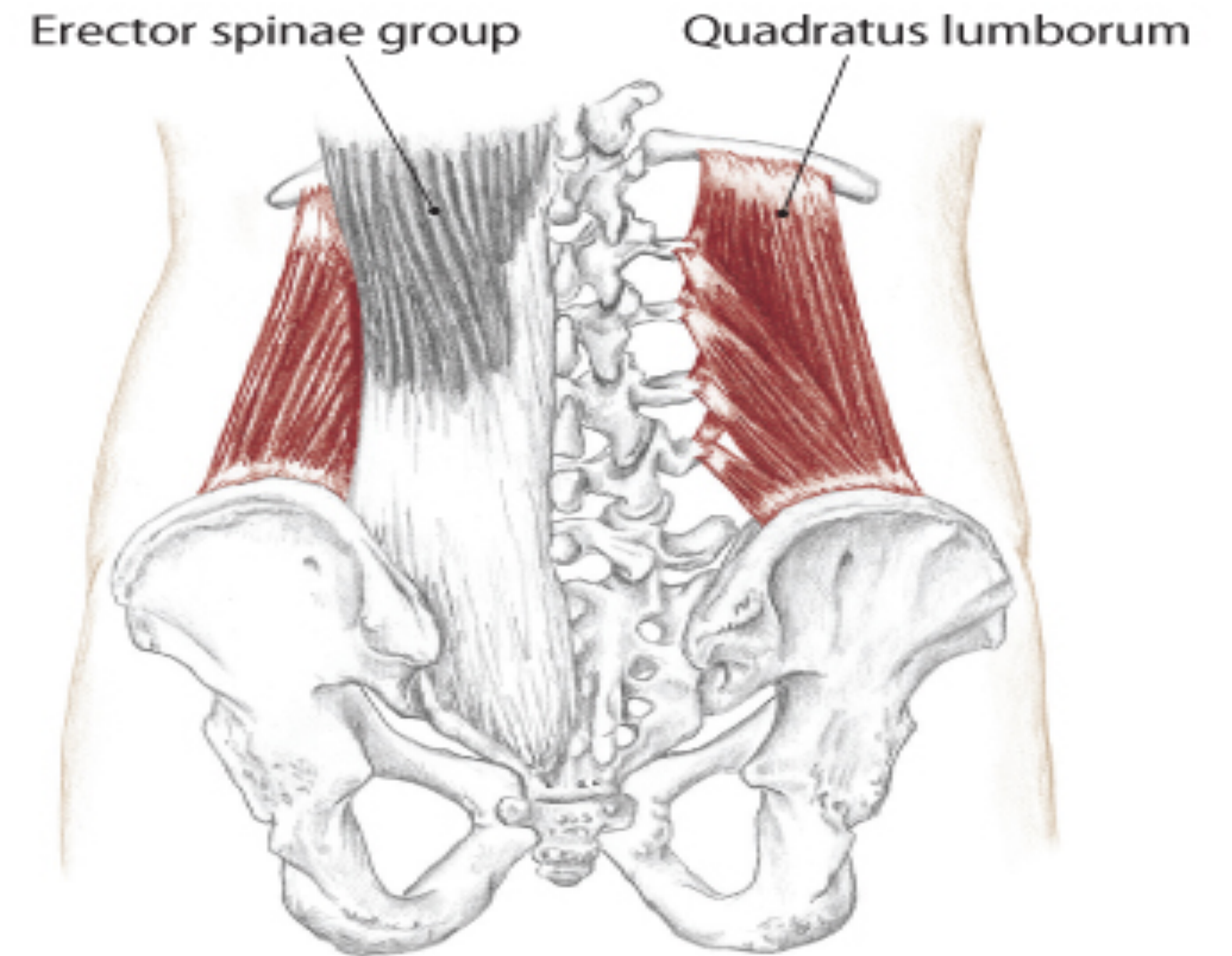
Anterior surface



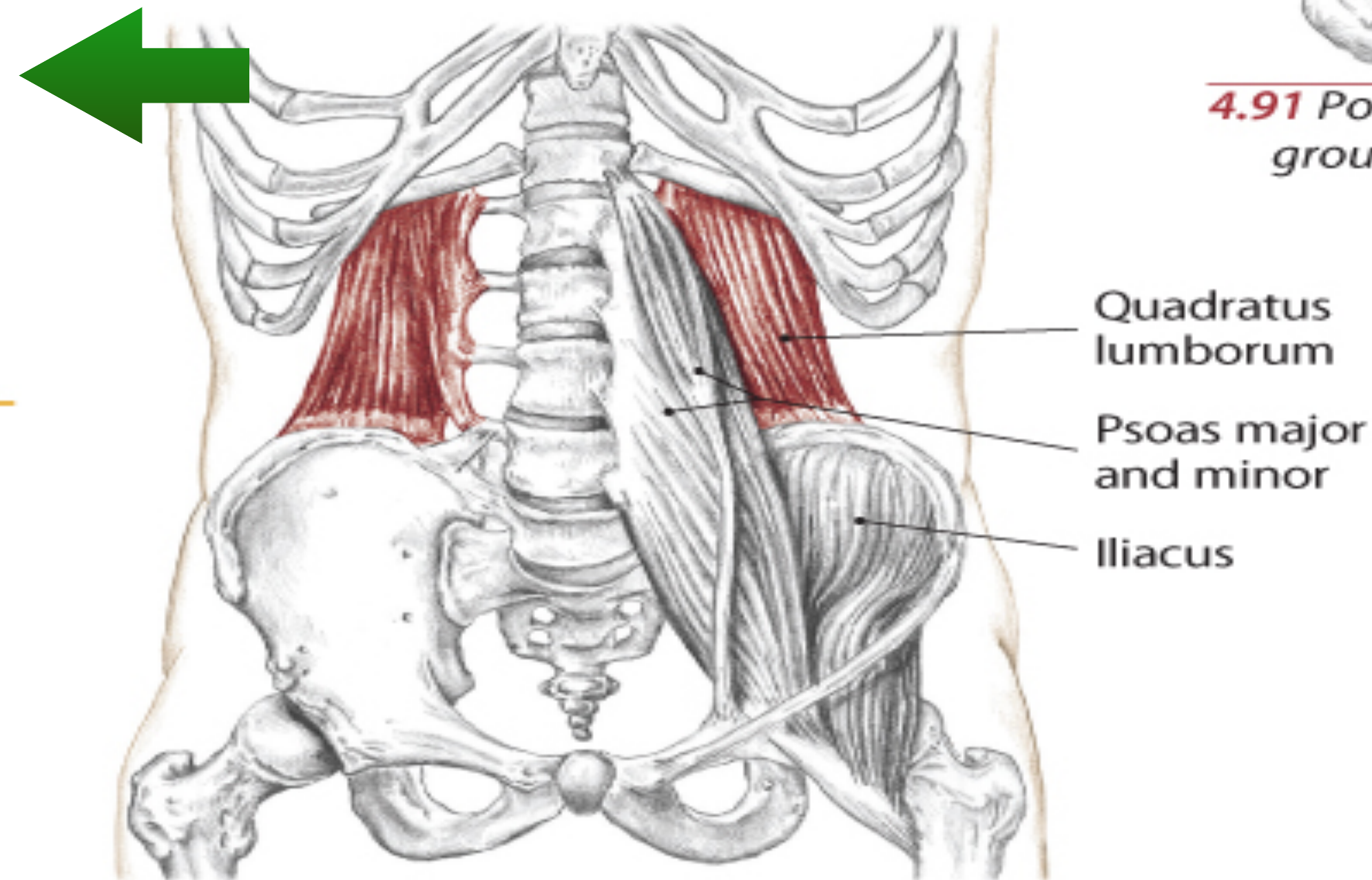
4.59 Cross section of the abdomen at the level of the third lumbar vertebra

Quadratus Lumborum

- 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

Diaphragm

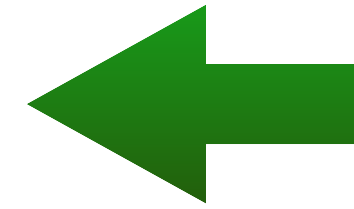
A Draw down the central tendon of the diaphragm

Increase the volume of the thoracic cavity during inhalation

O Costal attachment:
Inner surface of lower six ribs

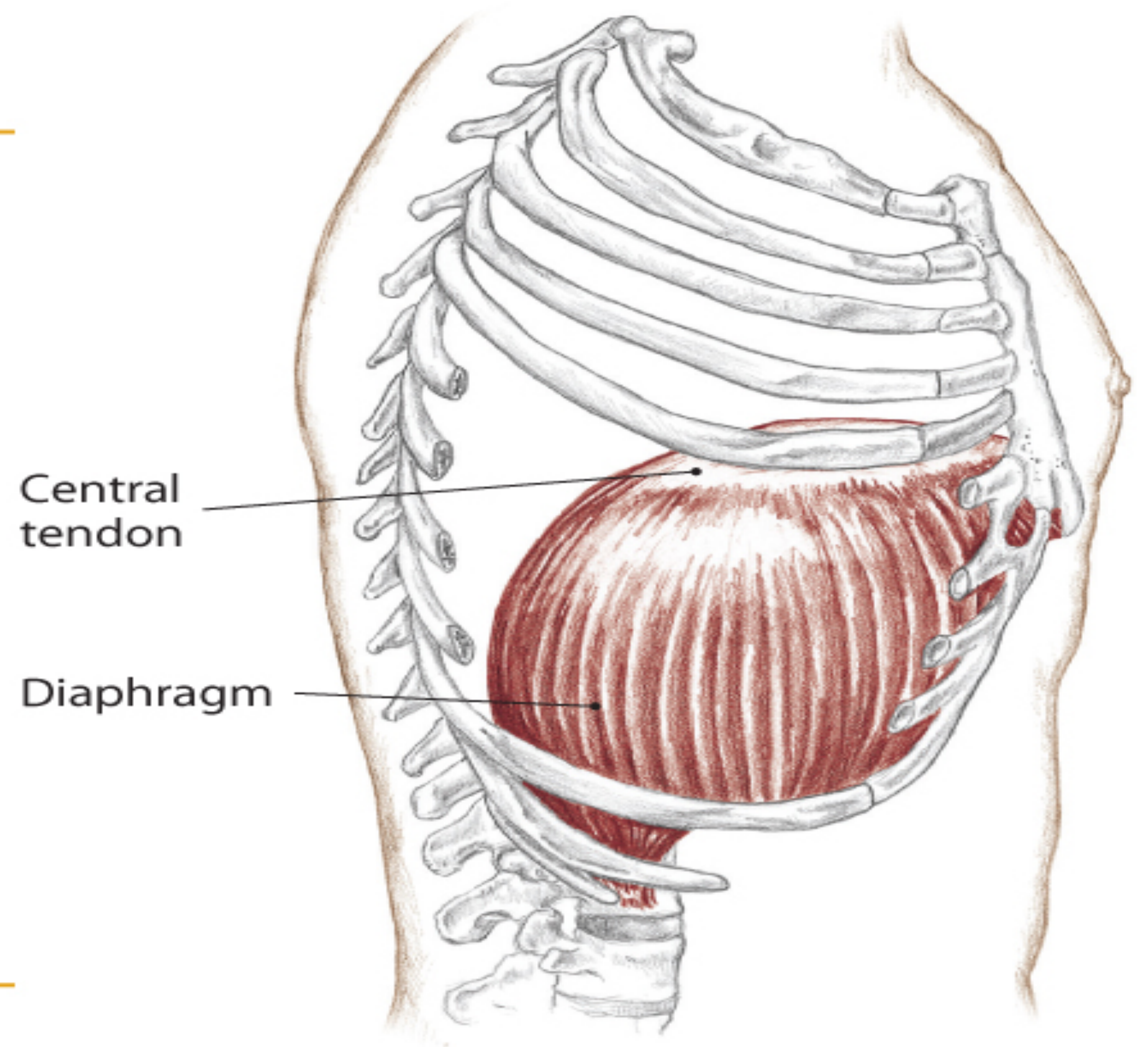
Lumbar attachment:
Upper two or three lumbar vertebrae

Sternal attachment:
Inner part of xiphoid process



I Central tendon

N Phrenic C3, 4, 5



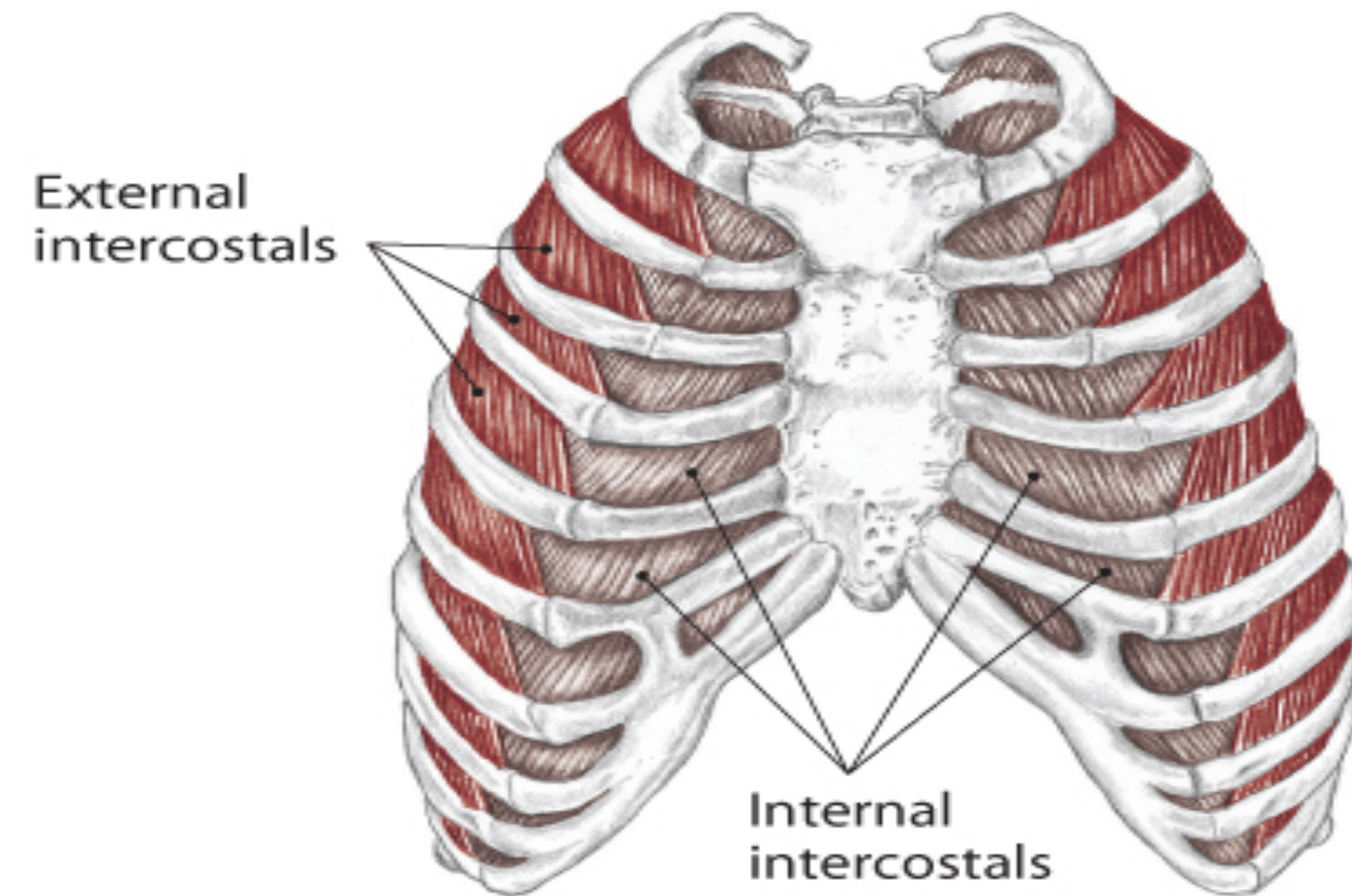
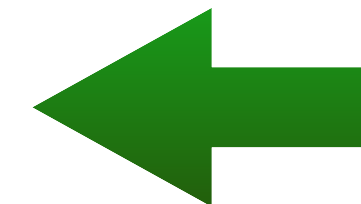
4.108 Lateral view of thorax showing diaphragm in position of exhalation

Intercostals

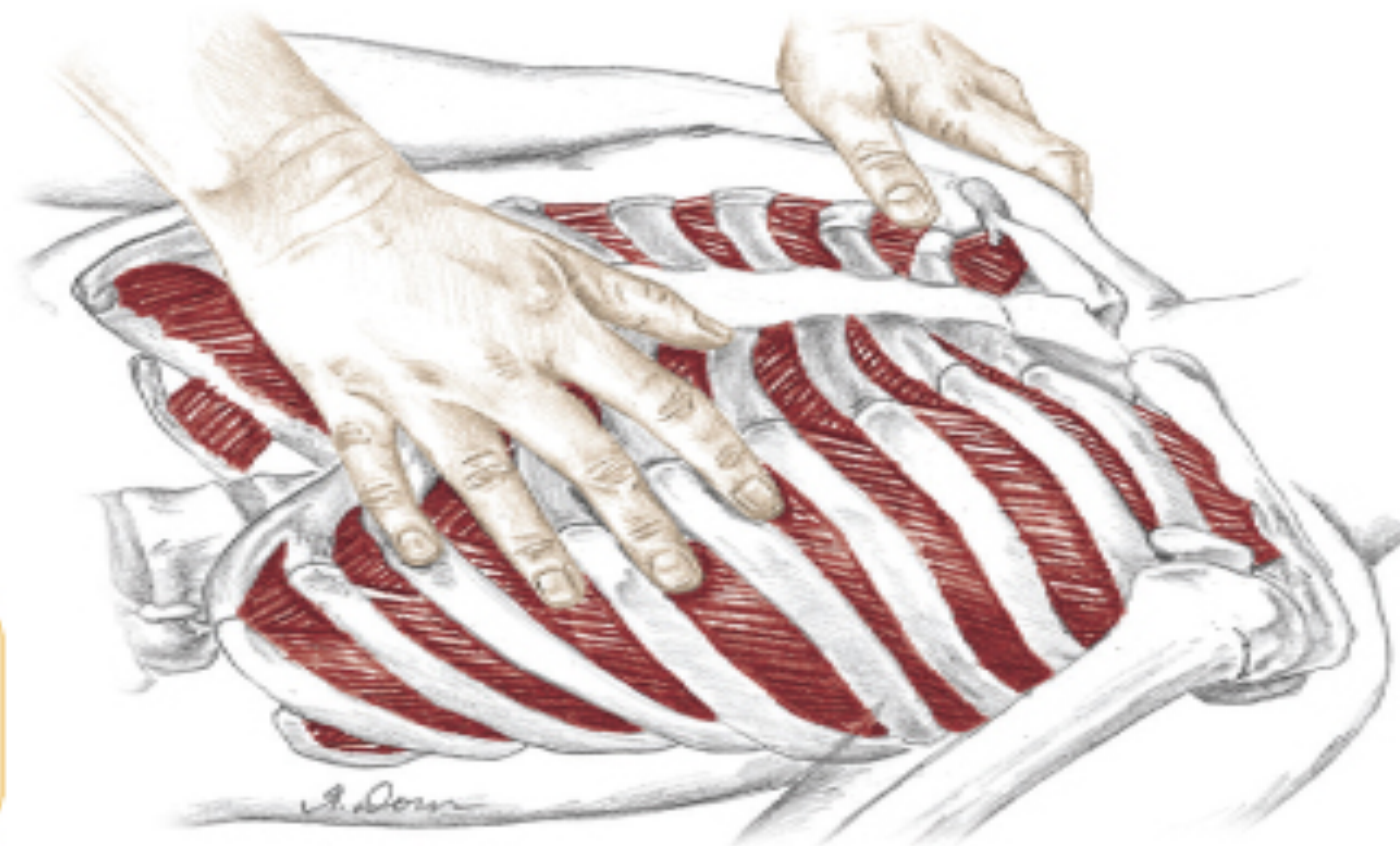
A *External Intercostals:*
Draw the ribs superiorly (increasing the space of the thoracic cavity) to assist with **inhalation**

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

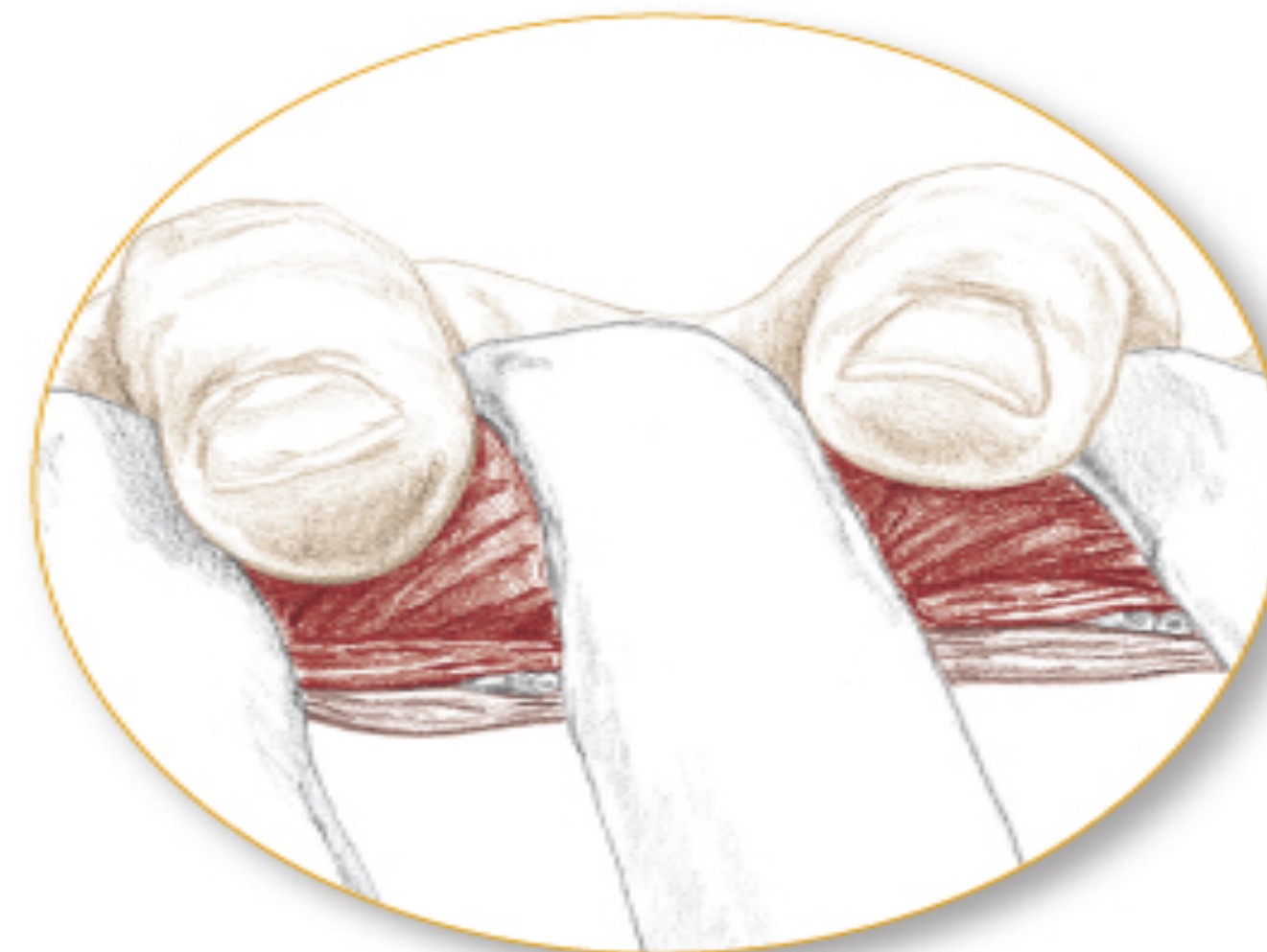
- O** Inferior border of the rib above
- I** Superior border of the rib below
- N** Thoracic



4.112 Anterior view of rib cage



4.113 Partner supine



Cross section of palpating intercostals

Find on a partner



Orange: Ilicostalis

Blue: Longissimus

Yellow: Semispinalis

Pink: Multifidus

Purple: Rotatores

Red: Interspinalis

Green: Intertransversarii

Movement & Exercise

Spine twist

Swimming series

Saw

Rolling like a ball

Free-Write : 5 minutes

What does your core want to say to you today?

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



www.BeverlyHosford.com/spine

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

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