# Anatomy for Yogis

*Village Yoga*
*Duck NC*

# Amy M Dougherty PT

*Owner*

*Outer Banks Physical Therapy*

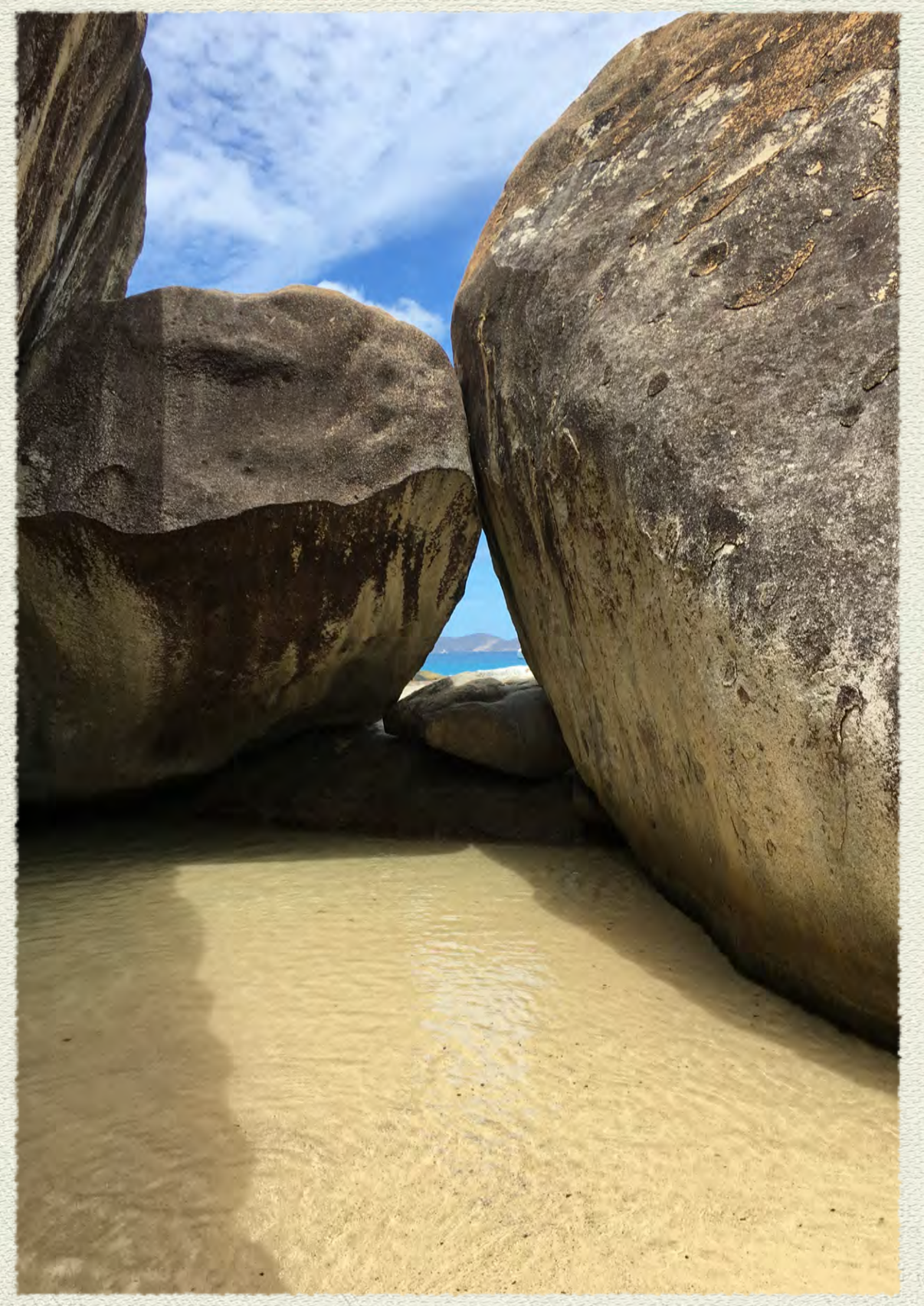
*Wife*

*Mother*

*Student of life*

“I am still learning”

*Michelangelo*



# Intention

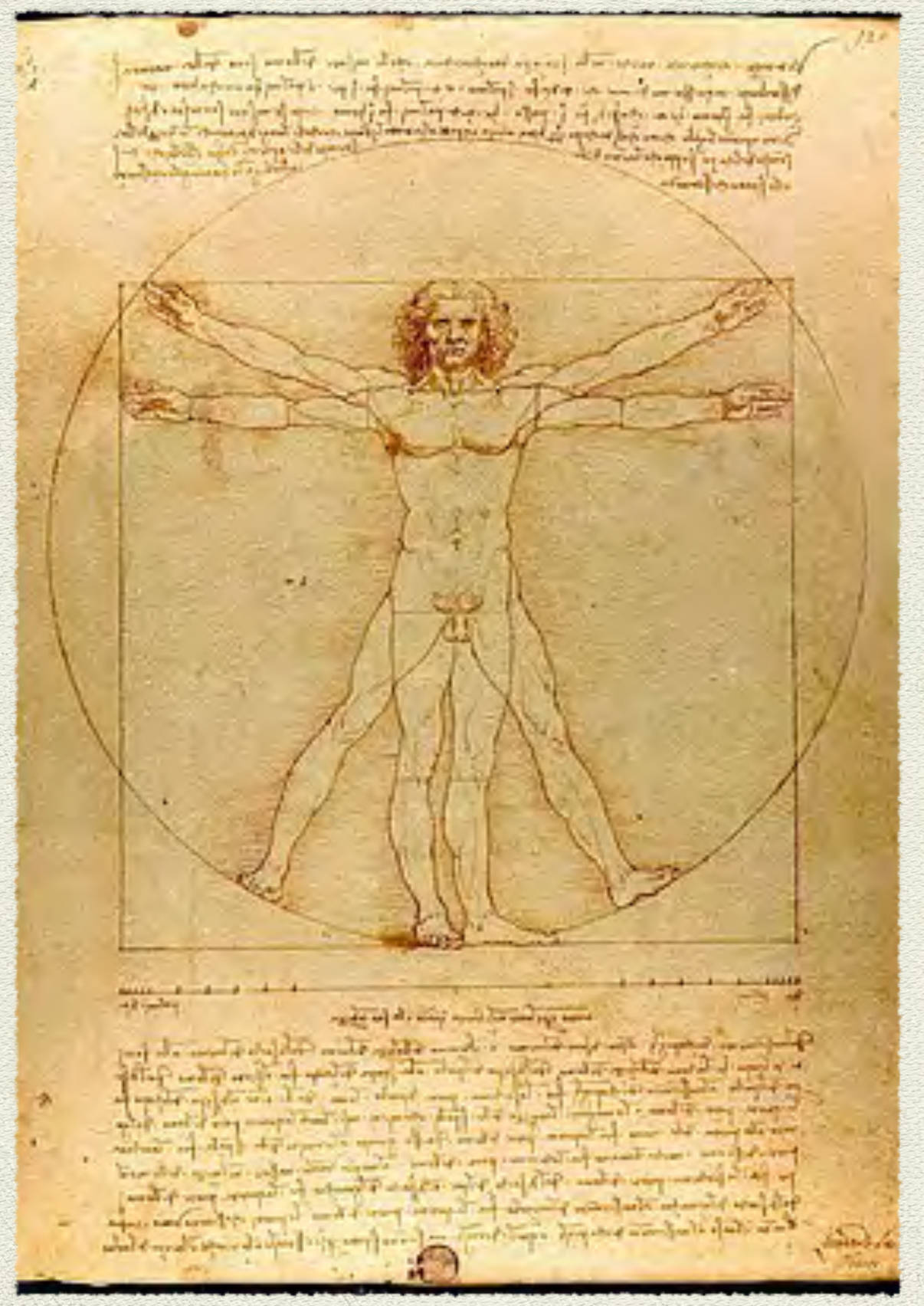
- Provide a basic understanding of human anatomy and its intimate relationship with the practice and teaching of yoga.
- Provide resources for continued / more in-depth knowledge of the science

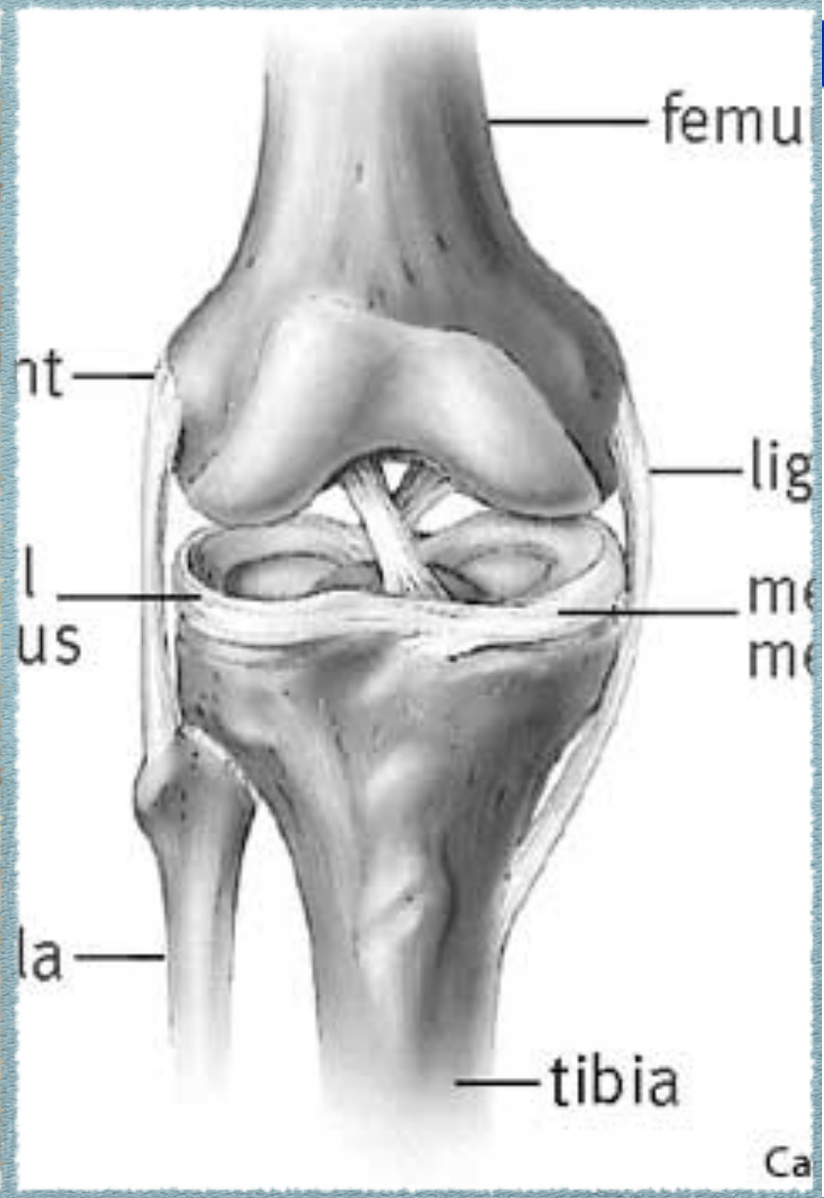
# Questions?

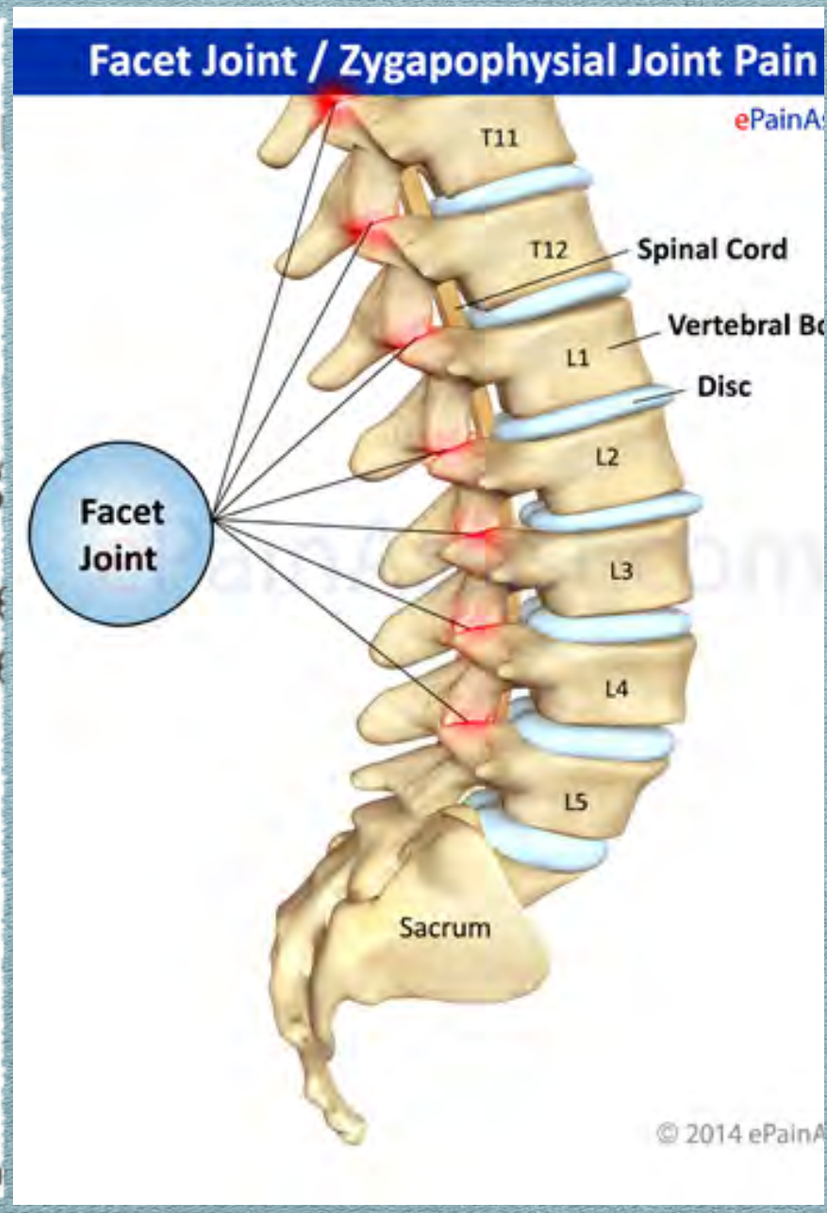
*large or small...jump in, ask.*

*"Joints between bones obey the tendon.*
*Tendon obeys the muscle and muscle, the nerve".*

*Leonardo Da Vinci*
*1506*

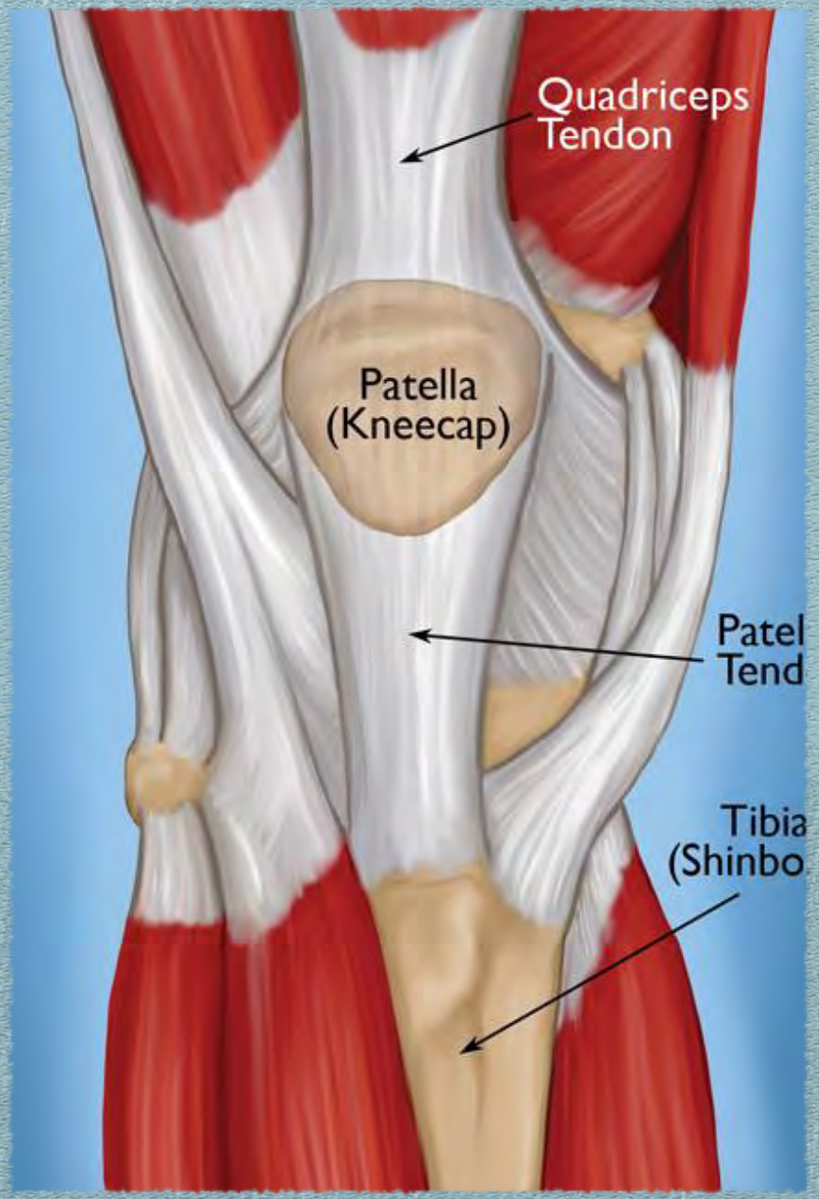


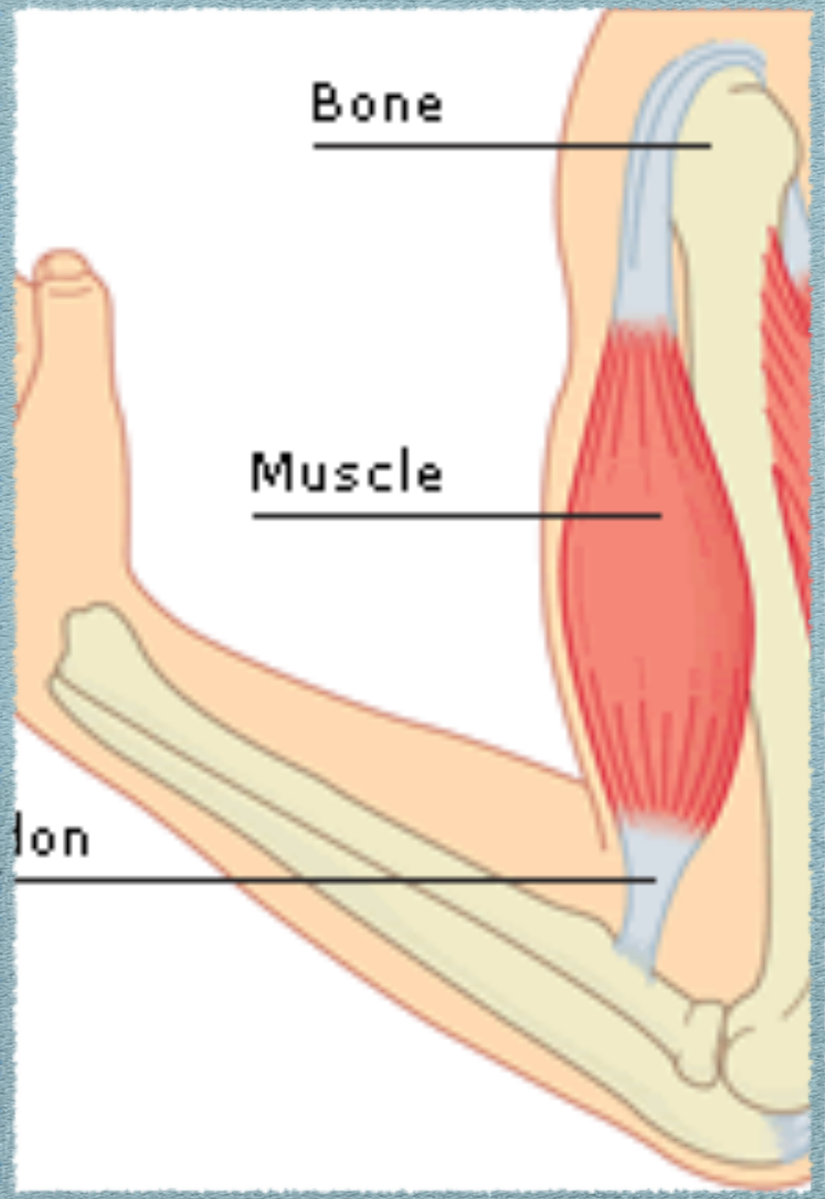


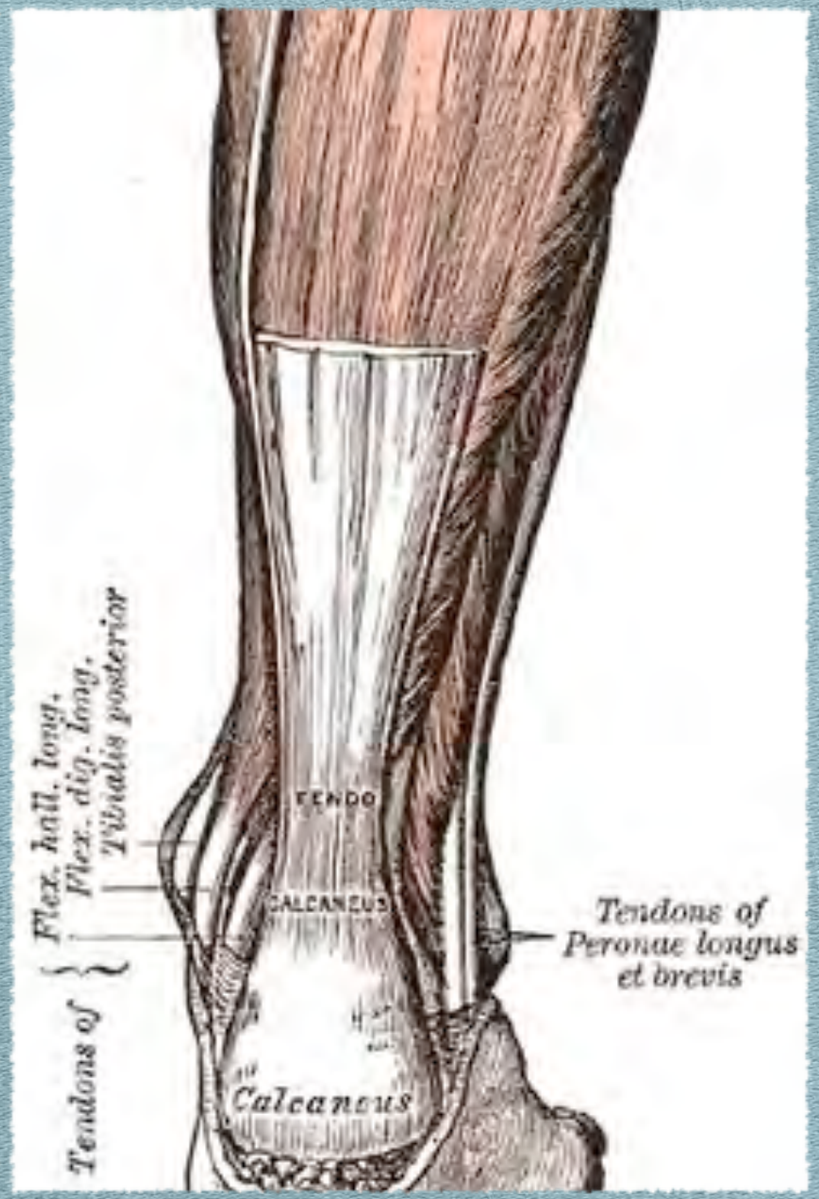




# Joint

*"A structure in the human or animal body at which two parts of the skeleton are fitted together"*

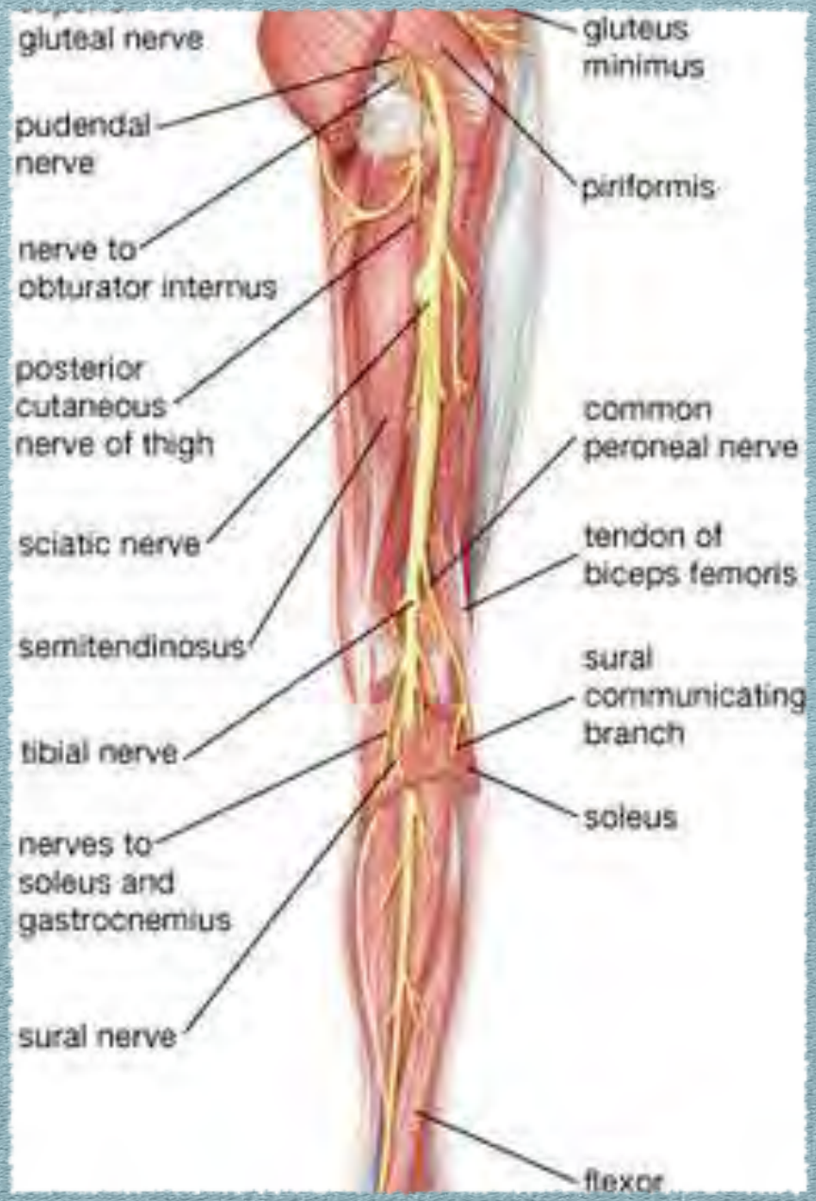


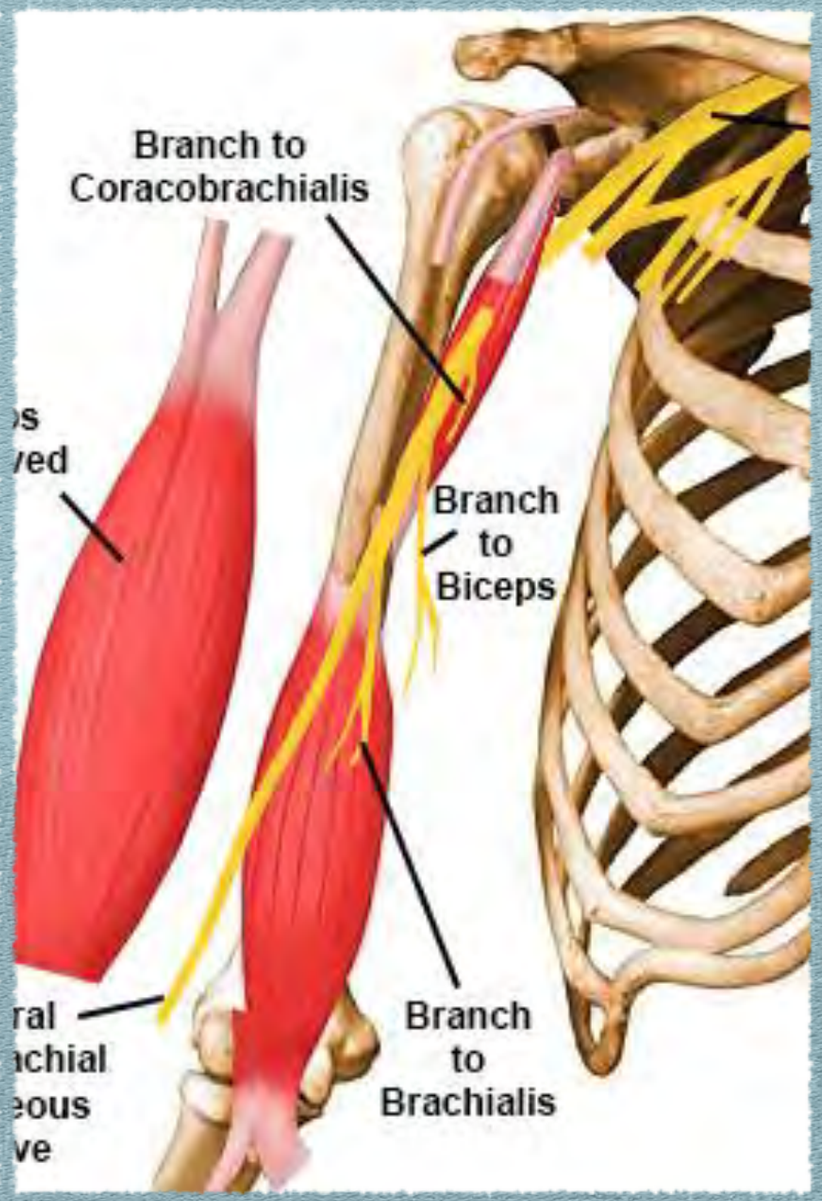



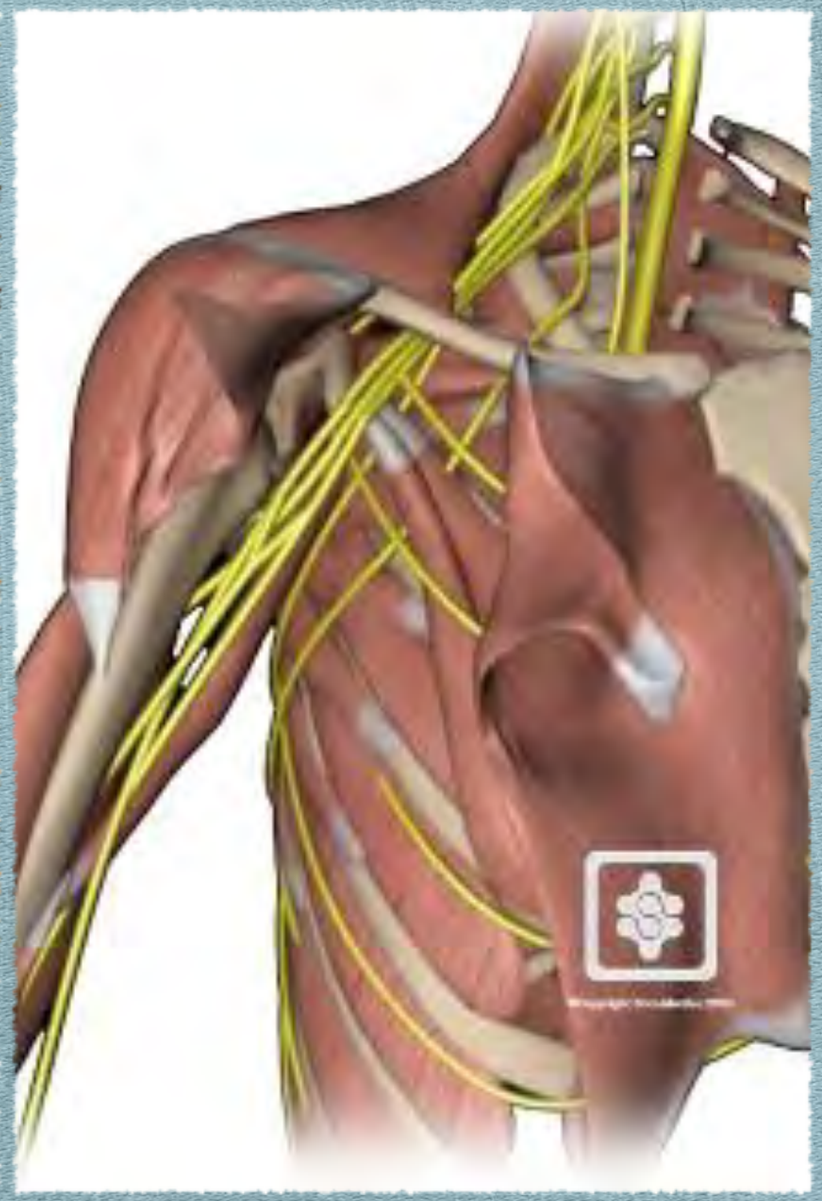




# Tendon

*"A flexible but inelastic cord of strong, fibrous collagen tissue attaching a muscle to bone"*



# Nerves

*"A whitish fiber or bundle of fibers that transmits impulses or sensations to the brain or spinal cord, and impulses from these to the muscles and organs.:*

# What did Da Vinci mean??

- Nerve impulse causes the muscle to contact
- The contraction is transferred through the tendon to move the bone
- The bone then moves the joint
- And..VOILA!  We MOVE!

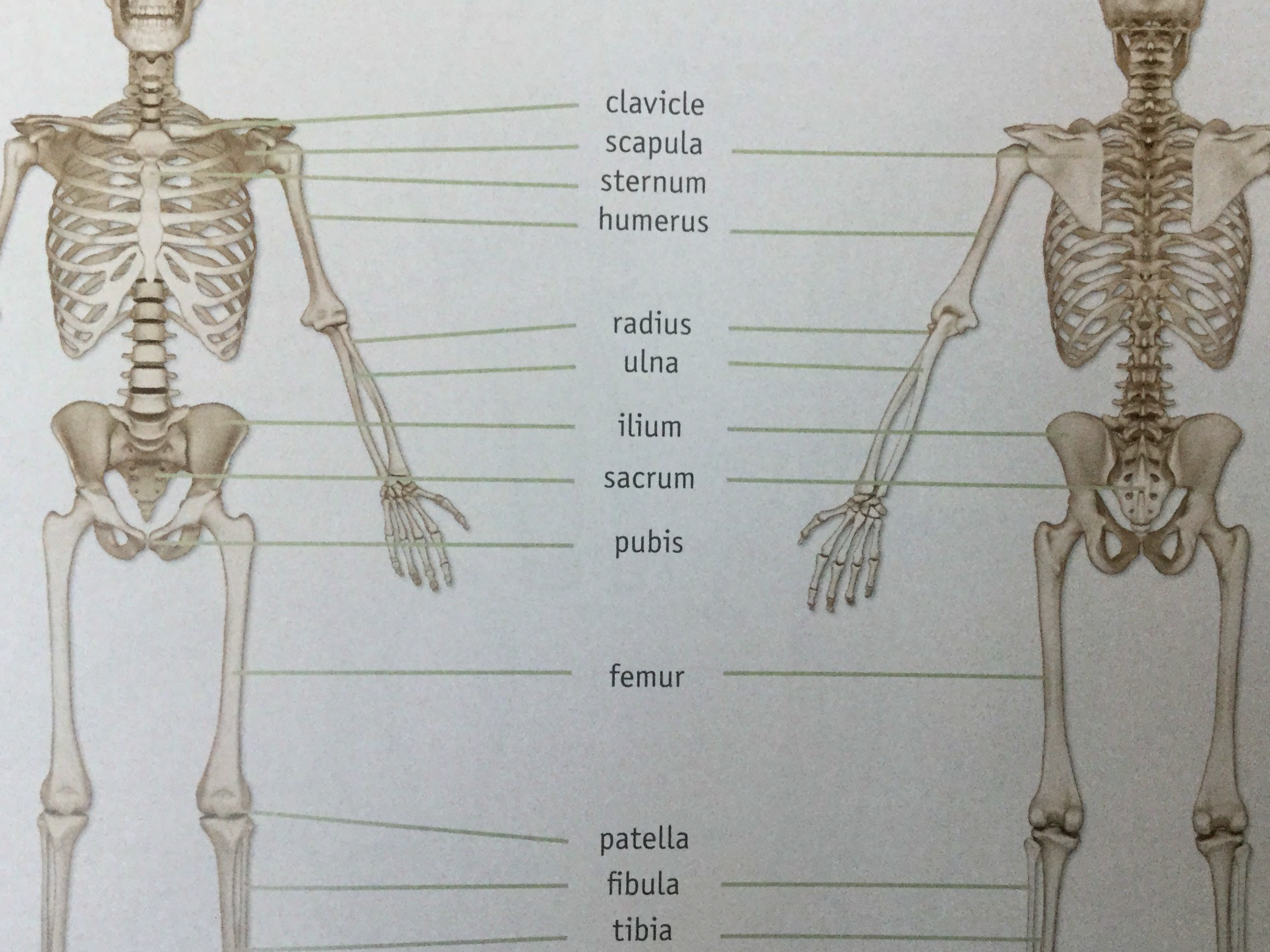
# Location, Location, Location

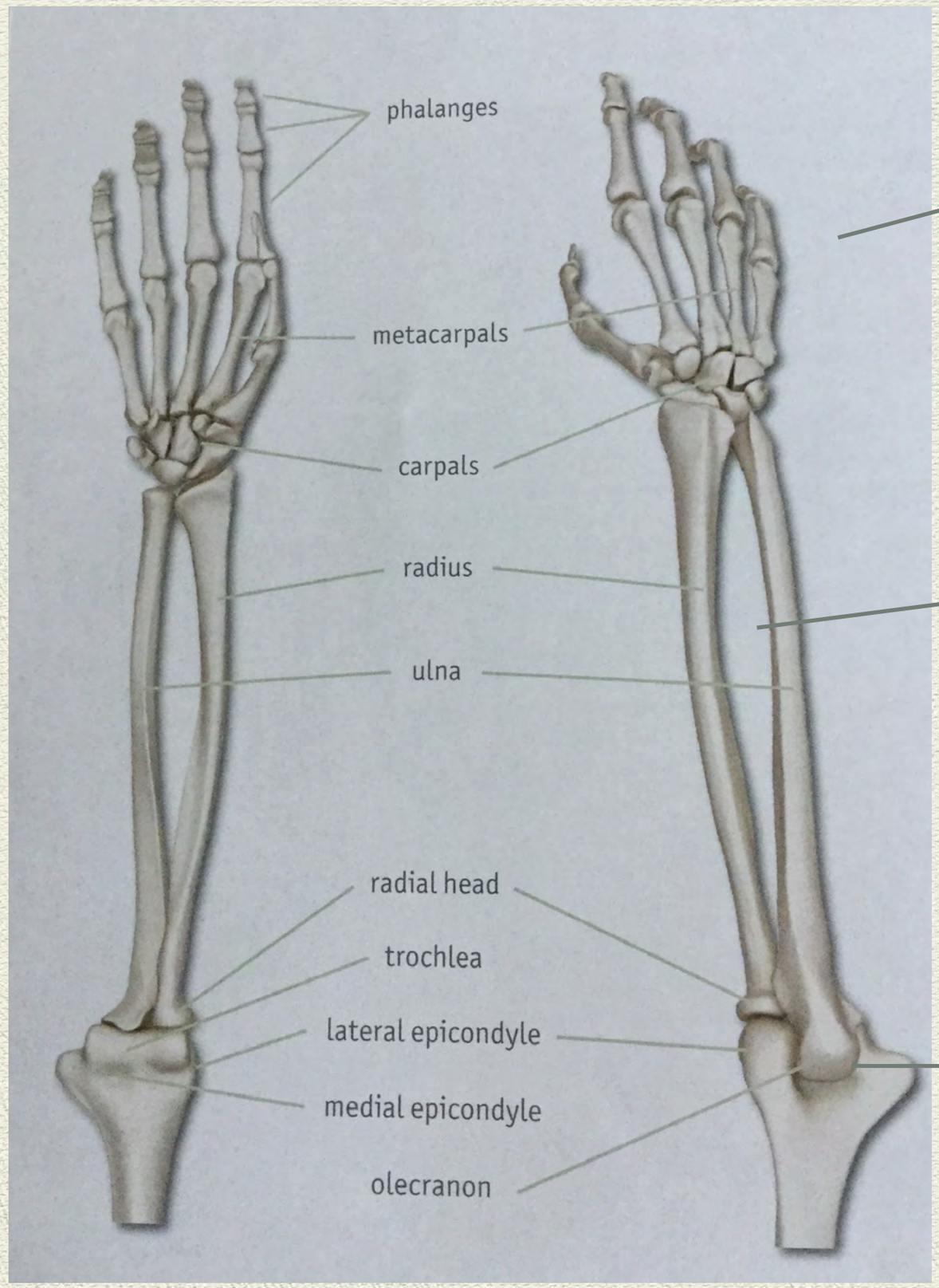
- Vocabulary to explain structures locations relative to each other.

- Vocabulary for direction of movement at the joint

# Skeleton

- Bones make up the skeleton which is the framework of our body
- Bones are linked together at joints
- Joints allow bones to move for function
- Bones contain calcium, blood vessels, nerves
- Yoga is good for the skeleton as it builds bone density through loading and resistance


clavicle
scapula
sternum
humerus
radius
ulna
ilium
sacrum
pubis
femur
patella
fibula
tibia

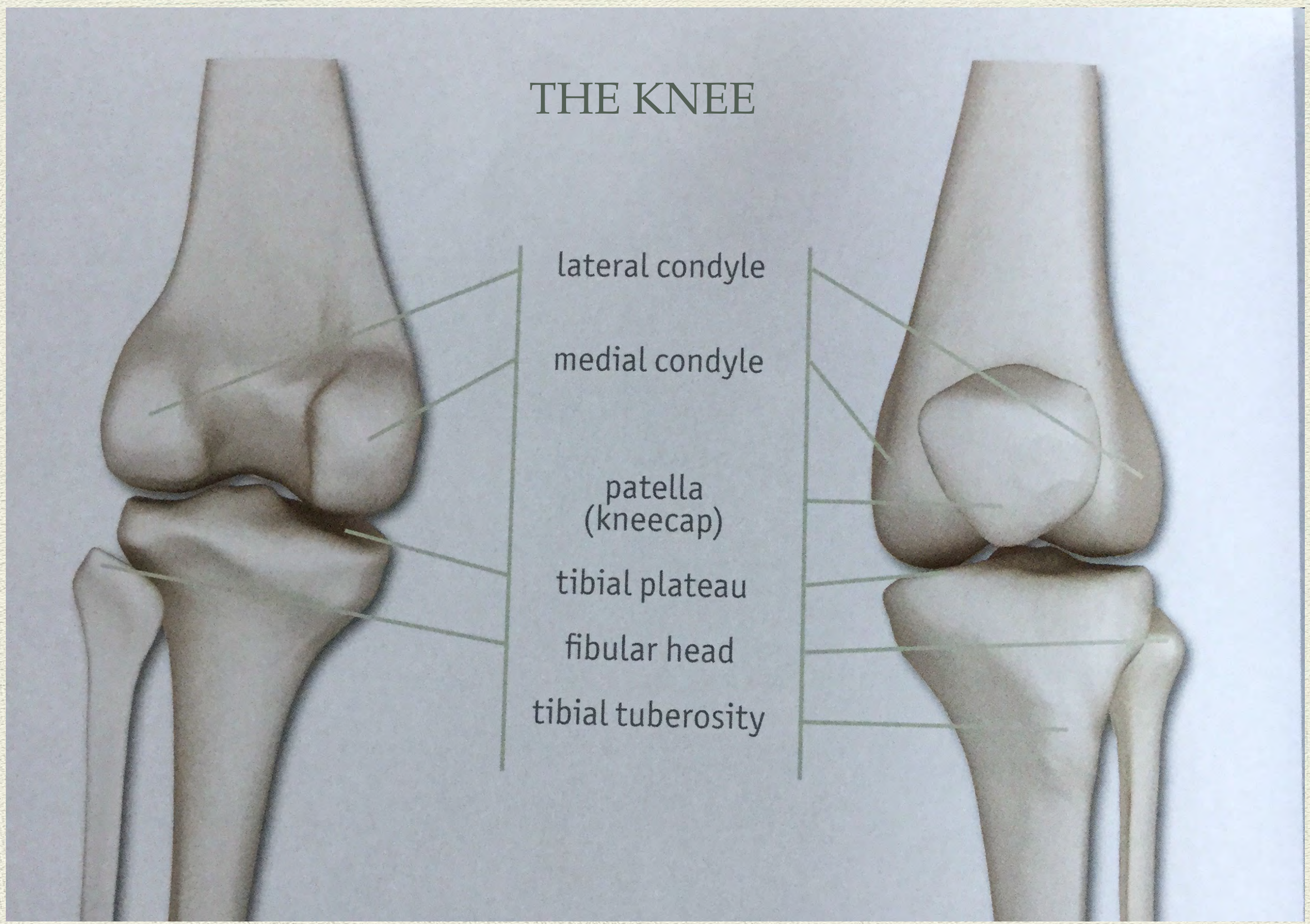



Hand

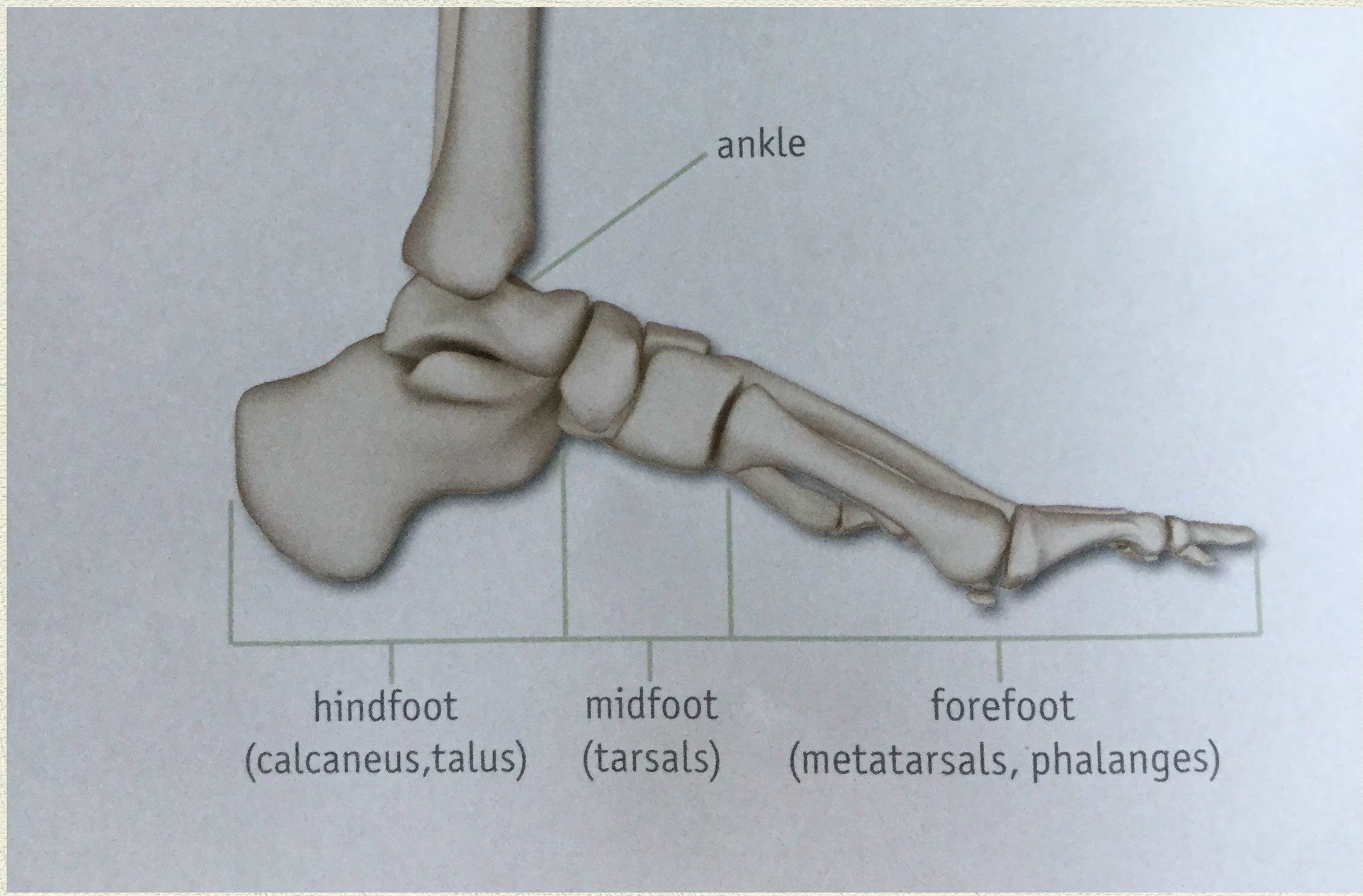
Forearm

Elbow

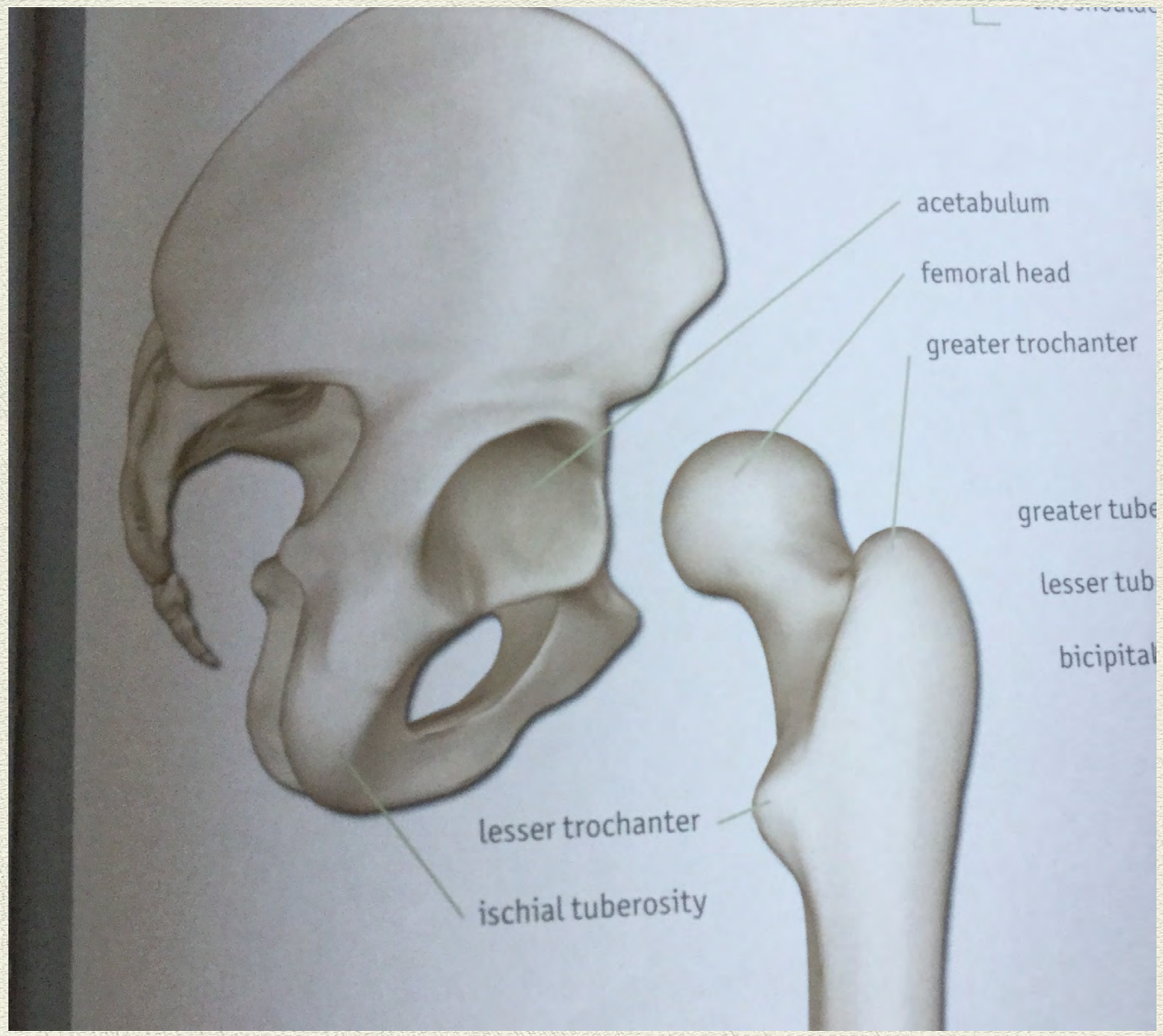
# THE KNEE


lateral condyle
medial condyle
patella
(kneecap)
tibial plateau
fibular head
tibial tuberosity

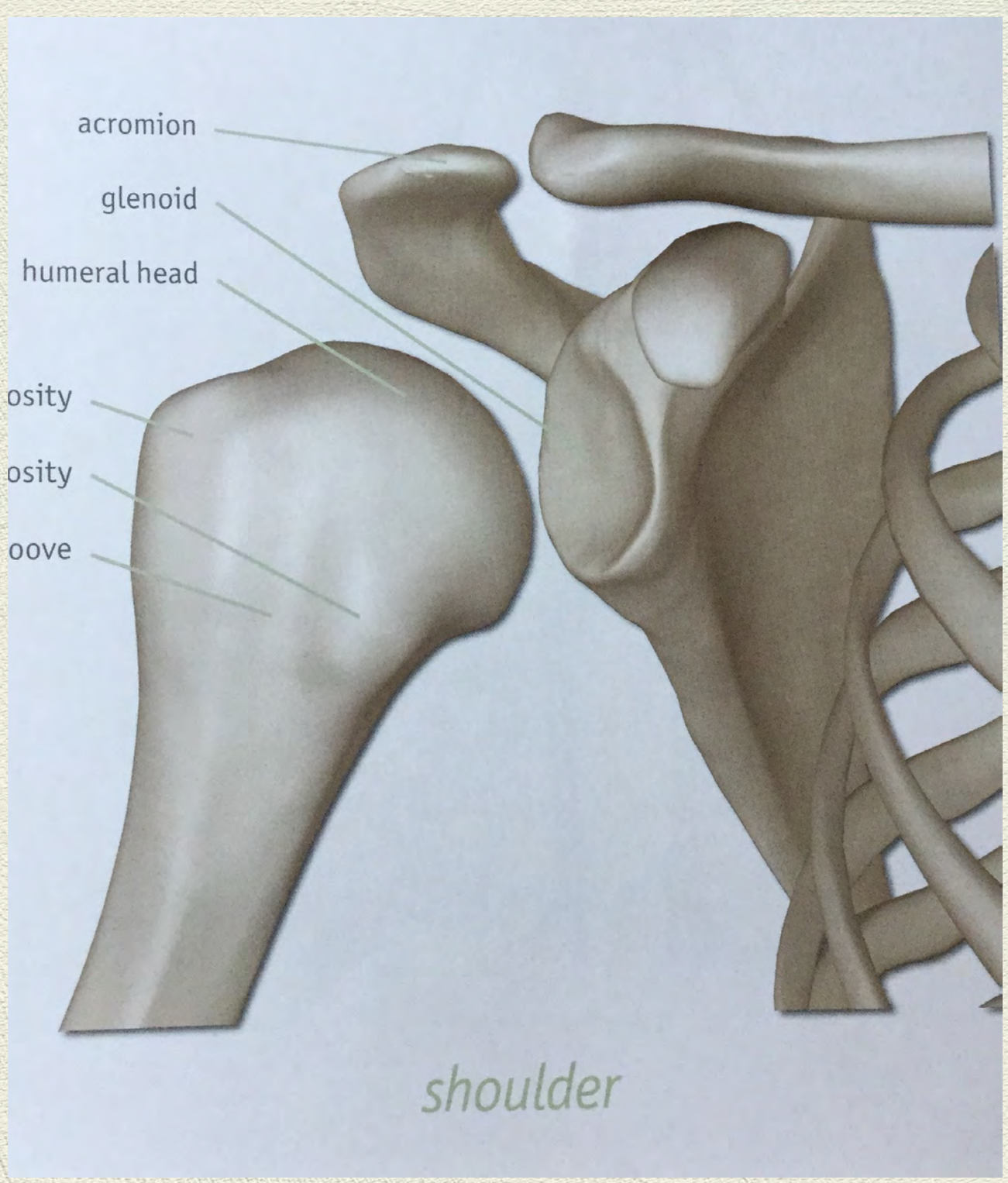
# THE ANKLE AND FOOT



# THE HIP


acetabulum
femoral head
greater trochanter
greater tube
lesser tub
bicipital
lesser trochanter
ischial tuberosity

# THE SHOULDER



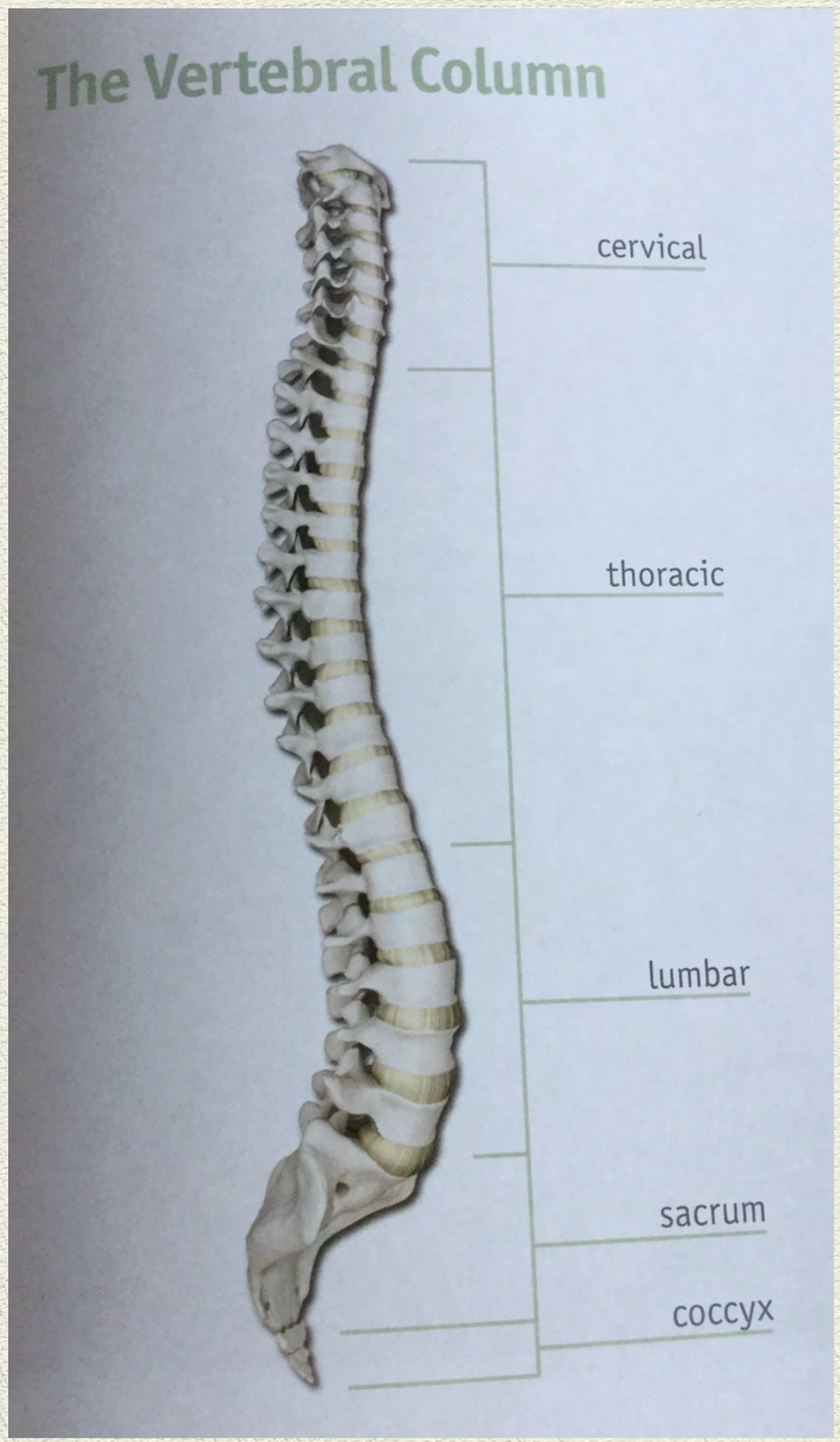
7 Cervical

12 Thoracic

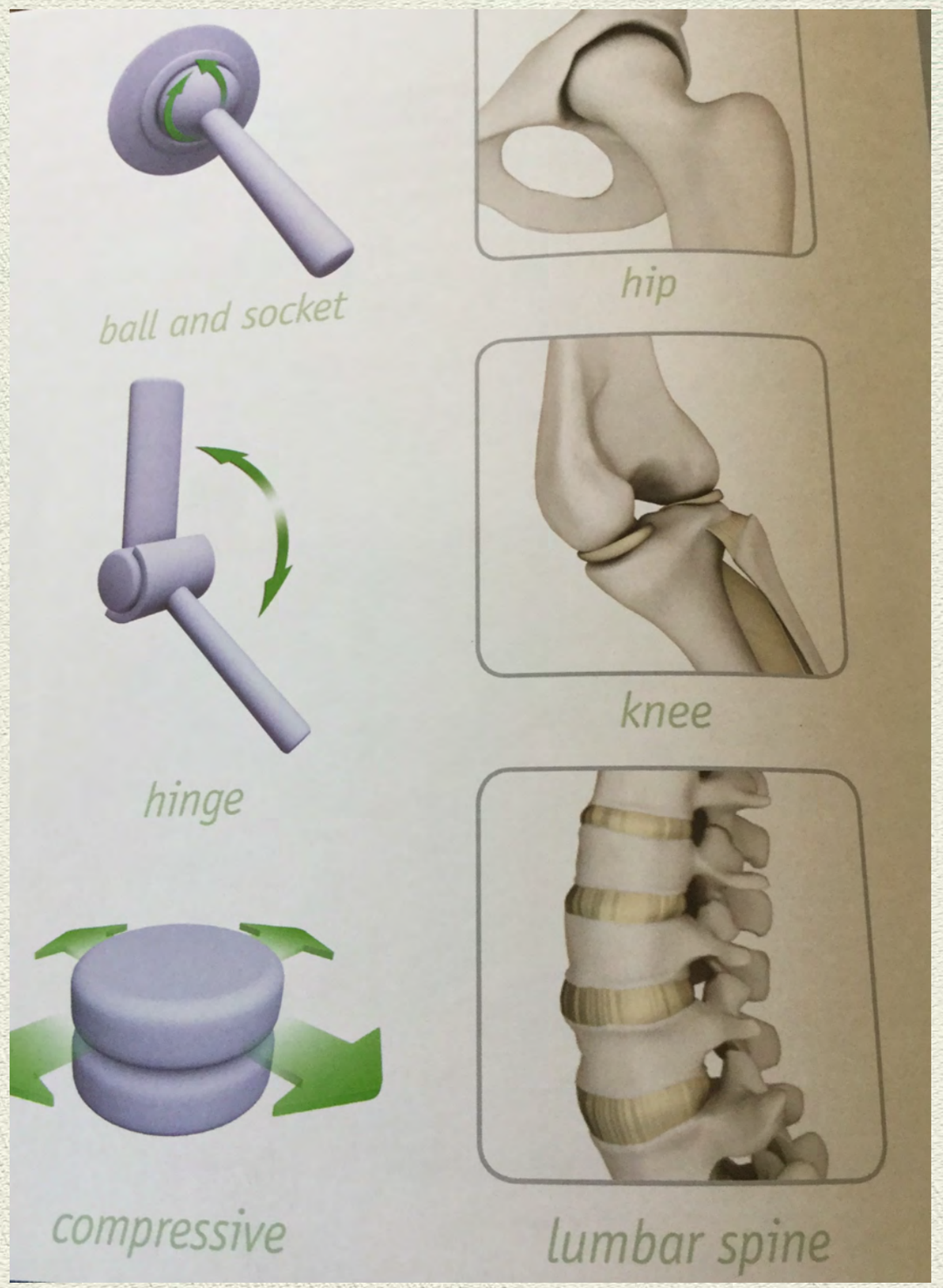
5 Lumbar

1 Sacrum

1 Coccyx

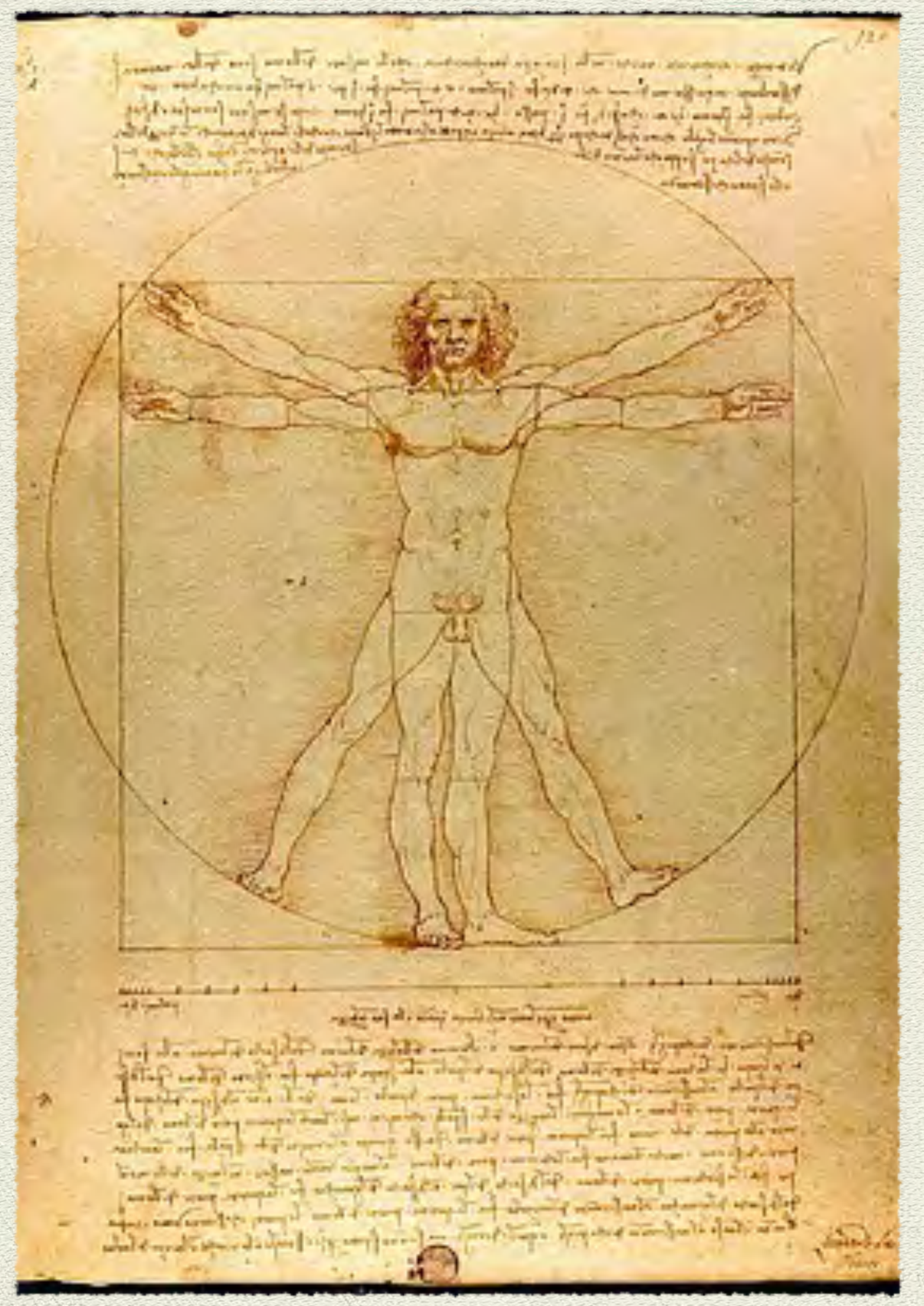


# Types of Joints



# Neutral posture

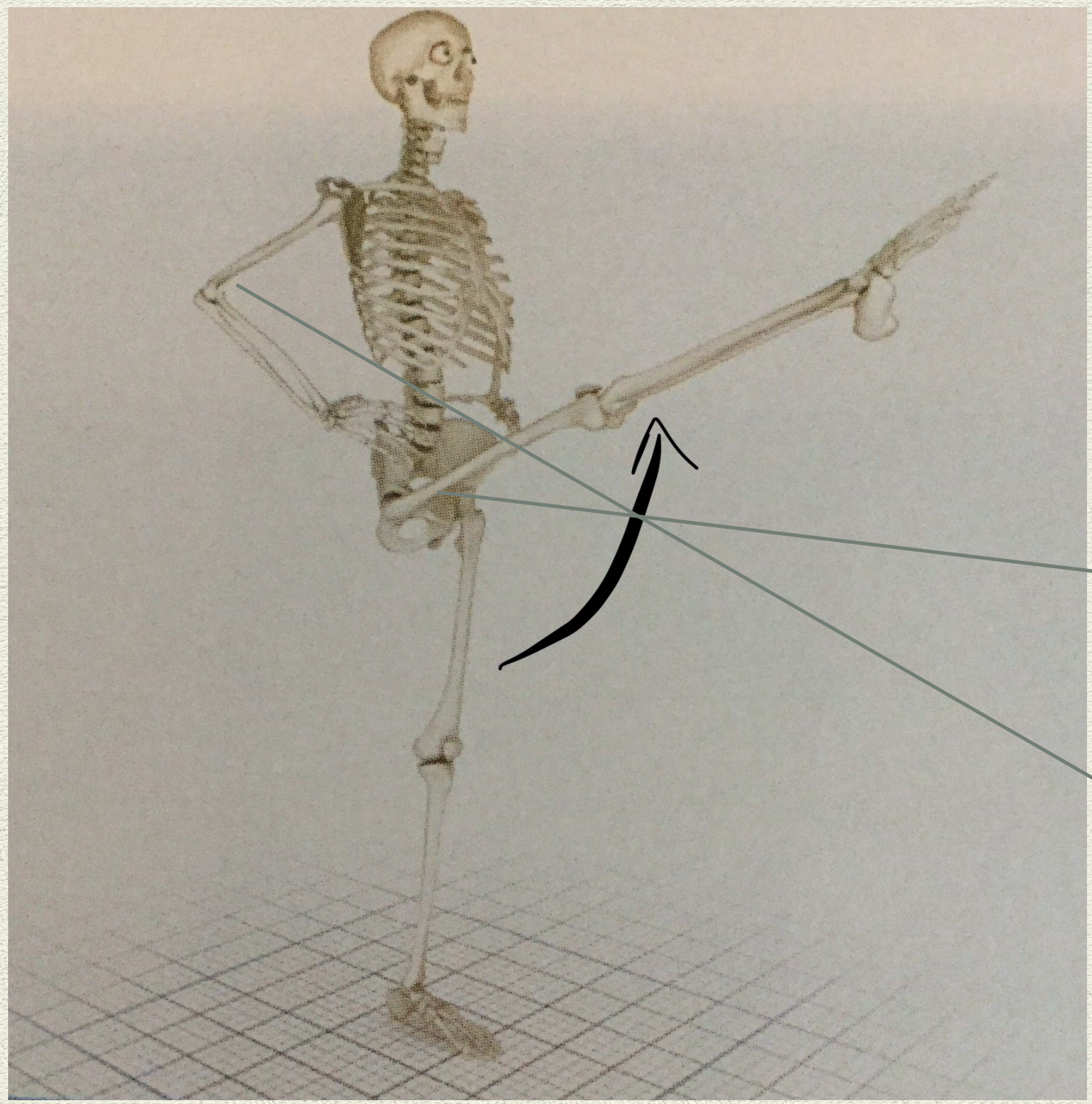
*This is the "start position" for learning the vocabulary of movement.*
*DaVinci was brilliant!*



# Flexion and Extension

- Opposing actions
- Always relative to “neutral position”

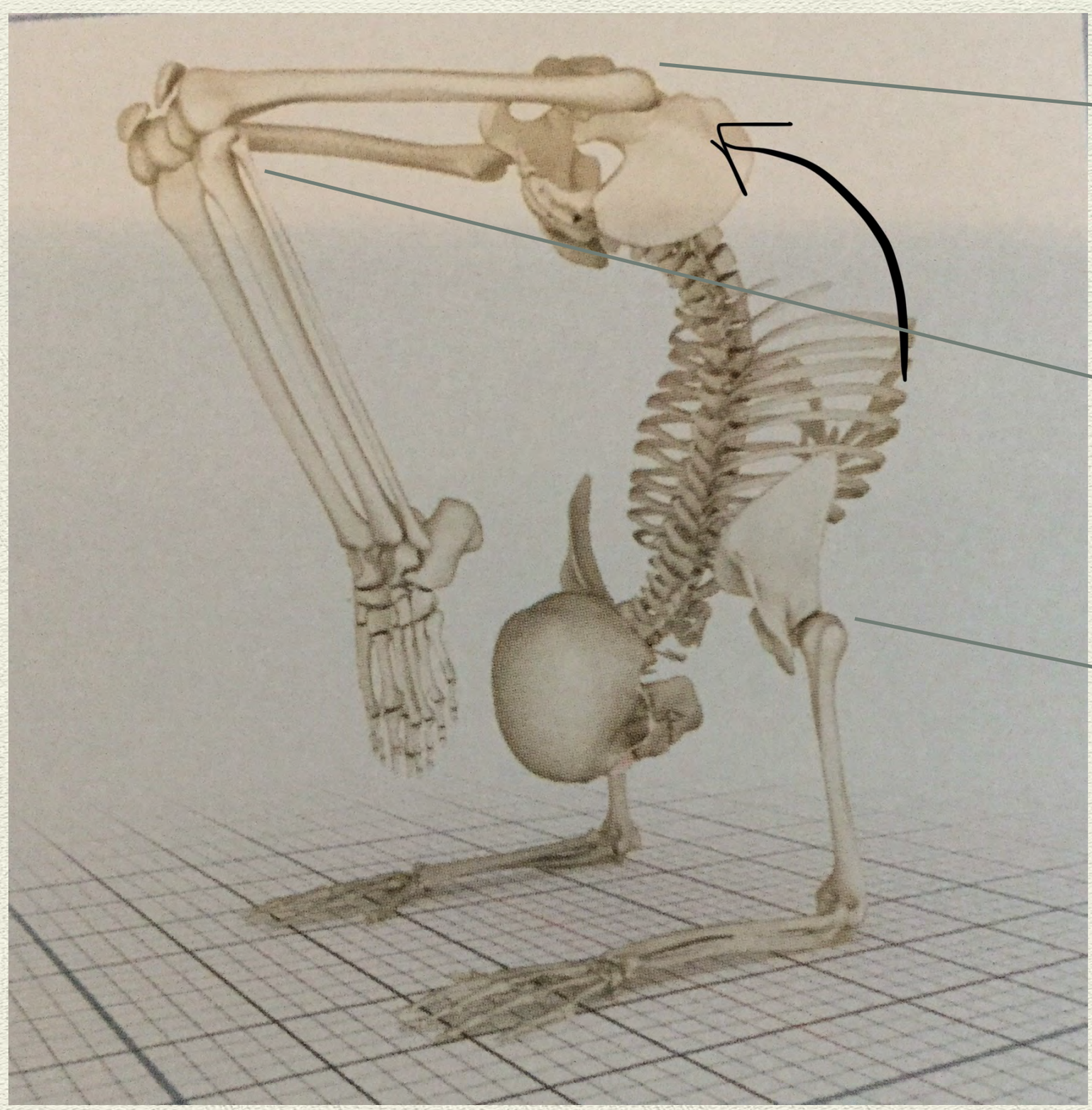
# FLEXION



Movement that decreases the angle between 2 body parts
This is HIP flexion

This is ELBOW flexion

# Extension



Movement that increases the angle between 2 body parts

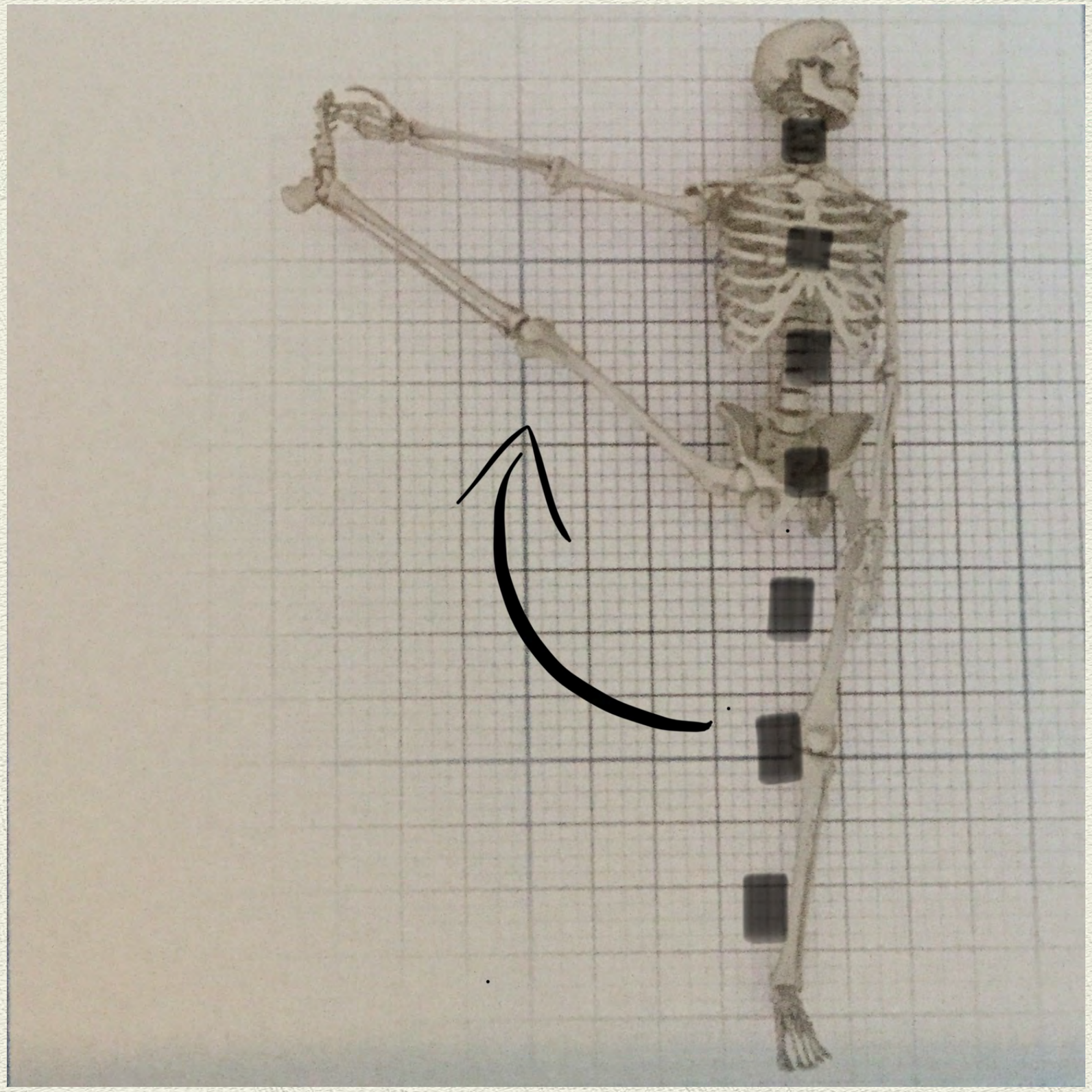
Is this knee flexion or extension?

Shoulder flexion or extension?

# ABduction" and "ADduction"

- Opposing actions
- Most commonly used at the shoulder, hip and fingers
- ABD: away
- ADD: add to

# ABDUCTION

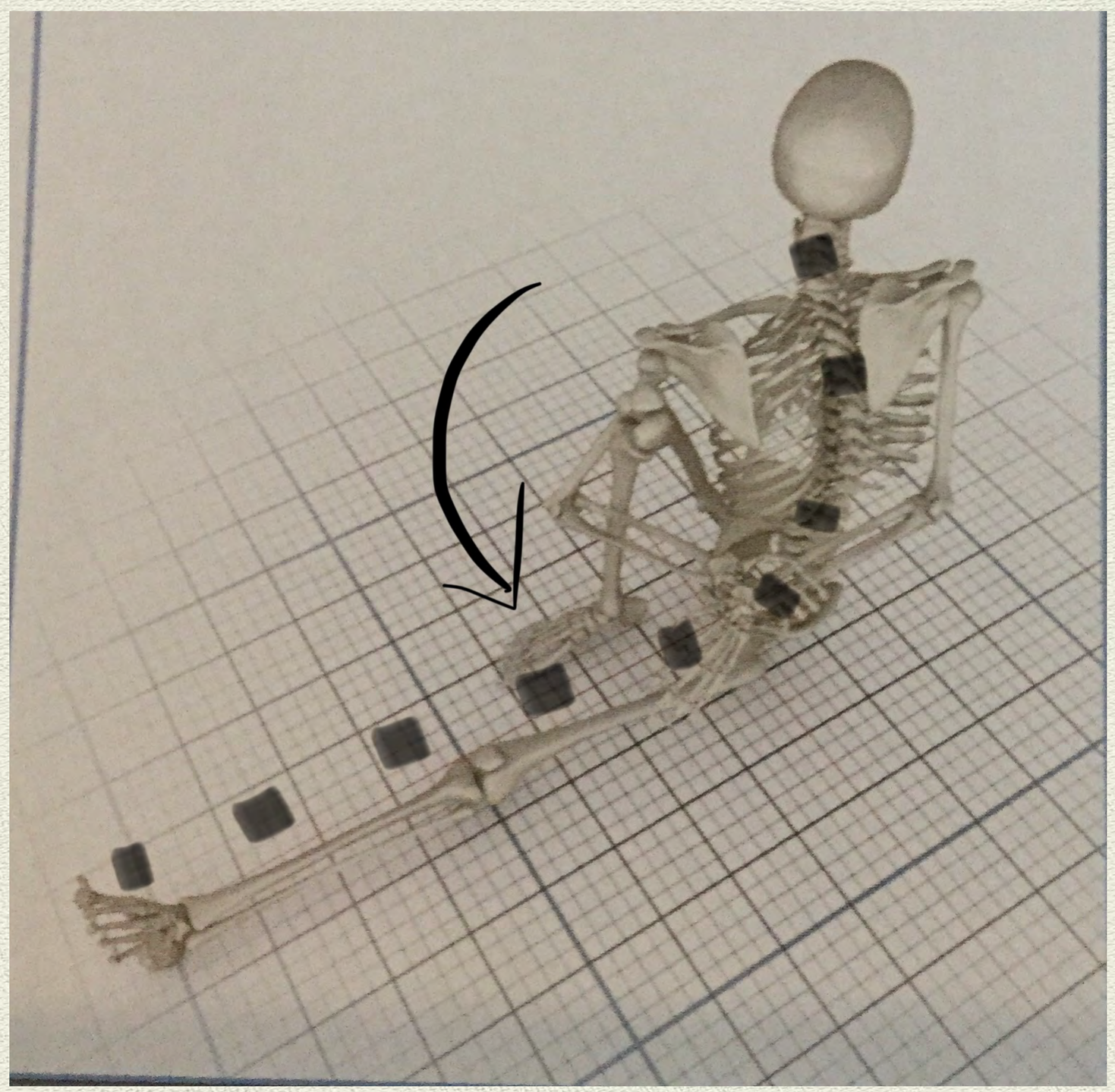


Movement AWAY from the midline

If some one is ABDUCTED, they are taken AWAY

Sometimes called A-B duction

# ADDUCTION



Movement TOWARD the midline.

This is ADDUCTION of the right hip

You “add” to your center self

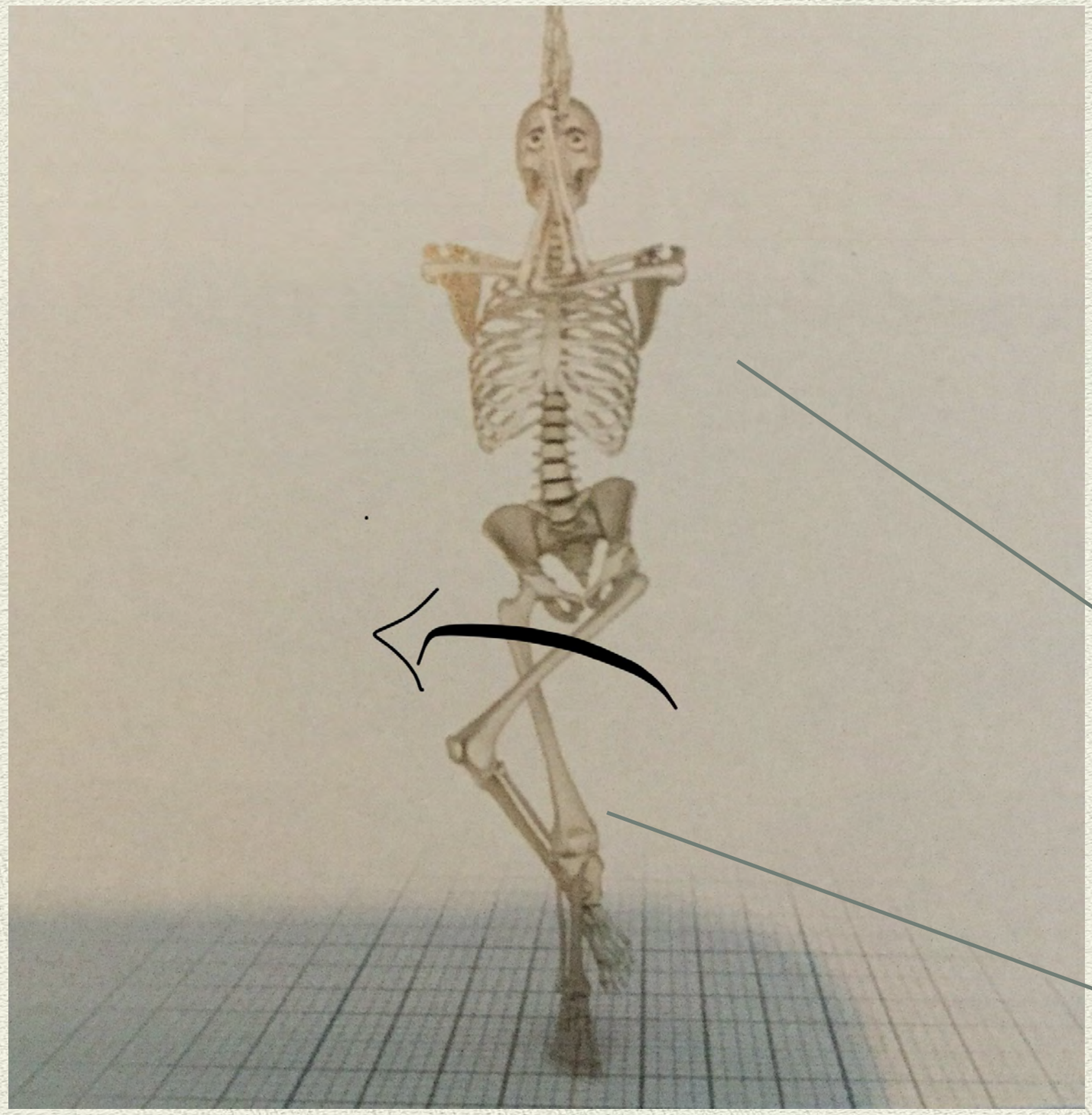
Sometimes referred to as A-D duction

- Abduct your shoulder
- Adduction your fingers
- Abduct your hip
- Flex your wrist
- Extend your neck
- Flex your lumbar spine
- Abduct your spine??

# Internal and External Rotation

- Opposing actions
- Most commonly cited for movement at the hip, or shoulder

# INTERNAL ROTATION



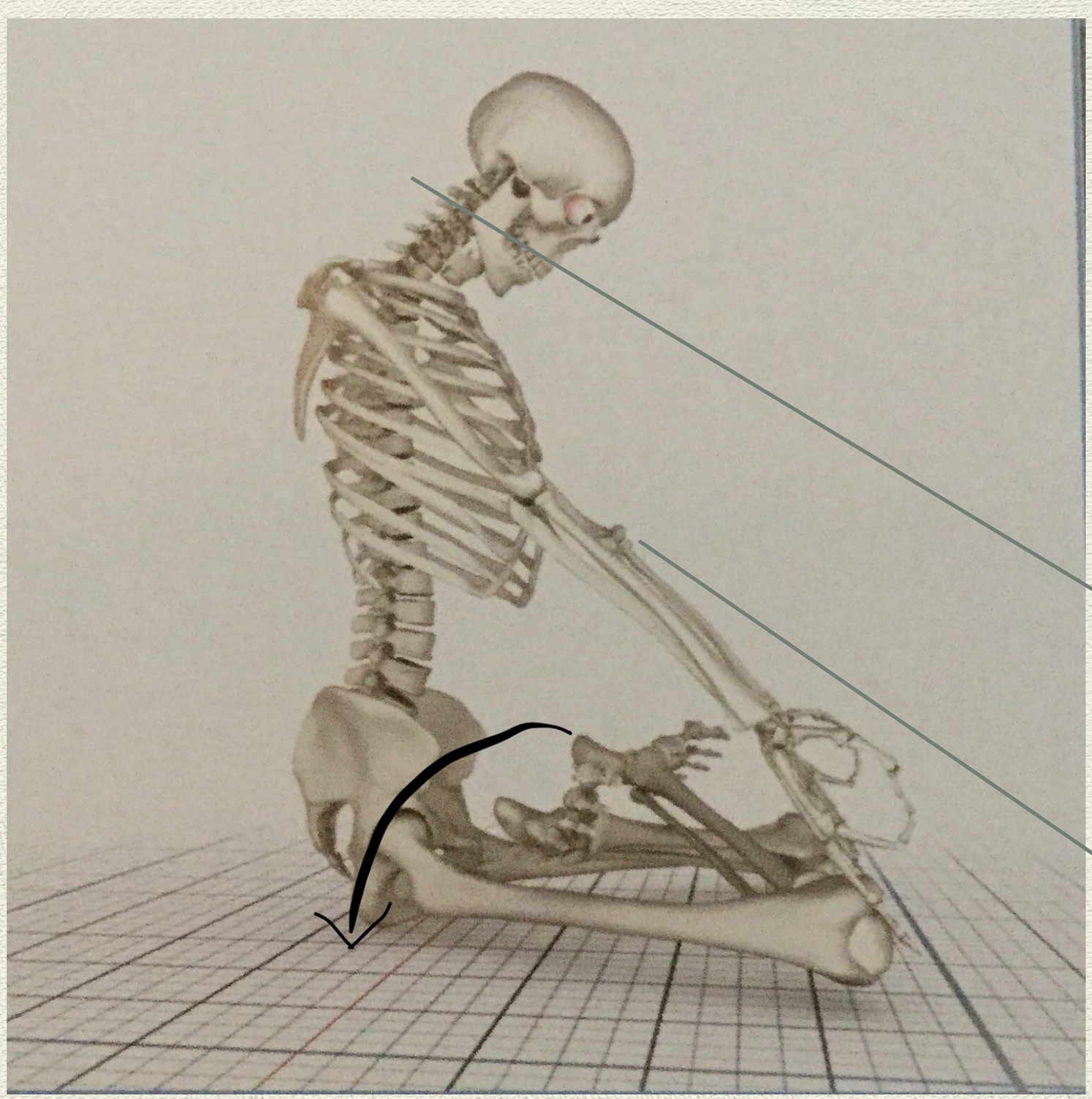
Rotation TOWARD the center of the body
Aka “medial rotation”

This is ADduction of the hip

Is this shoulder flexion or extension?

Is this knee flexion or extension?

# EXTERNAL ROTATION



Movement AWAY from the center of the body

How is this different from ABduction?

Is this cervical flexion or extension?

Is this elbow flexion or extension?

# MUSCLES

*LET”S MOVE*


SUNS OUT. GUNS OUT.
STAY CLASSY!
imgflip.com


I LIKE YOUR MUSCLES

# 700 named muscles

*Each is a discrete organ consisting of muscle tissue, tendons, nerves and blood vessels*

# Skeleton needs muscle, Muscle needs nerves

- Muscles attach to bones via tendons and move the bones through space
- This movement occurs at joints
- Some muscles cross more than one joint (ex: quadriceps, hamstring, bicep, tricep)
- Our body is like our house: it has a framework (muscles and bone) and an electrical system (our nervous system). They are interdependent.
- Again, Da Vinci was brilliant!

# Muscle Contractions

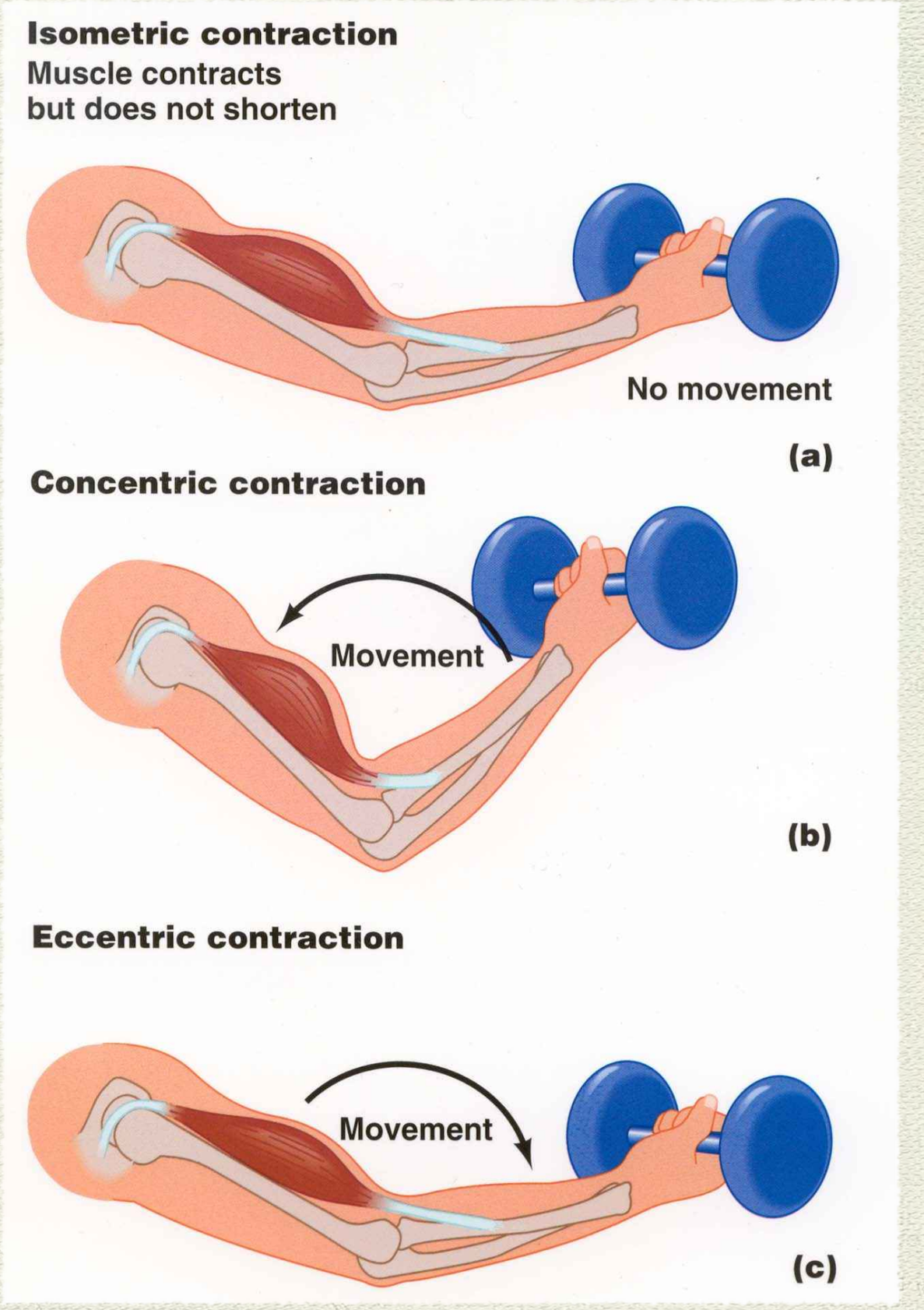
*Yoga practice employs each of these types of contractions*

*The type of contraction is dictated by how the muscle behaves:*

*Concentric: the muscle shortens*

*Eccentric: the muscle lengthens*

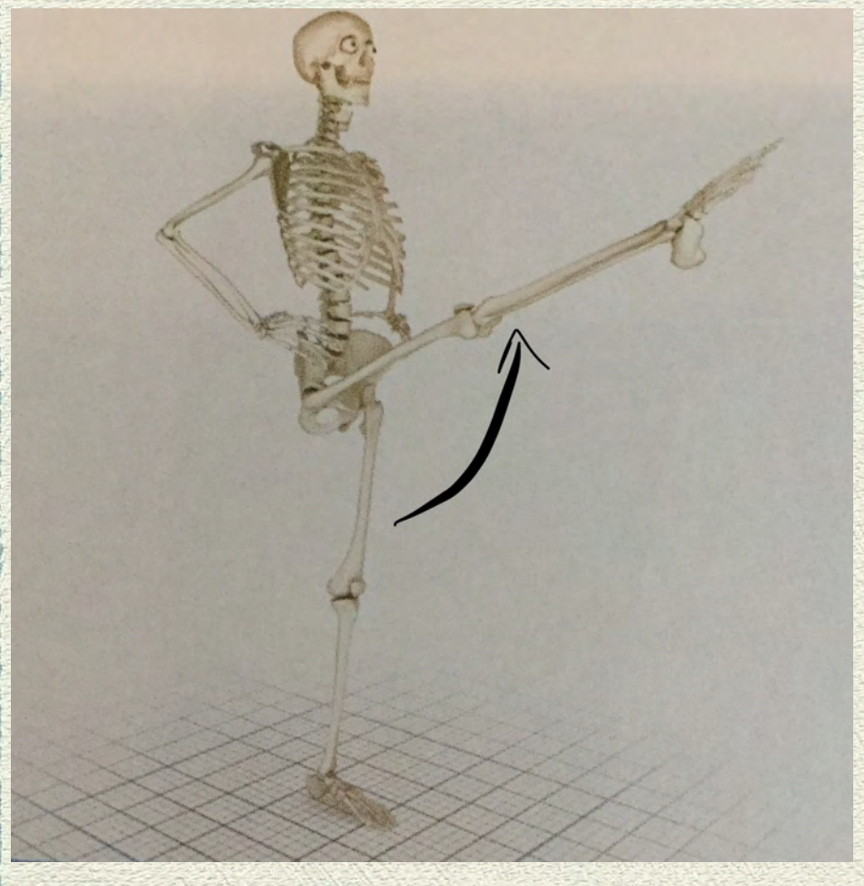
*Isometric: the muscle neither lengthens nor shortens.*



# The Foundation

*Pelvis and Lower Extremity*

# THE HIP MOTIONS

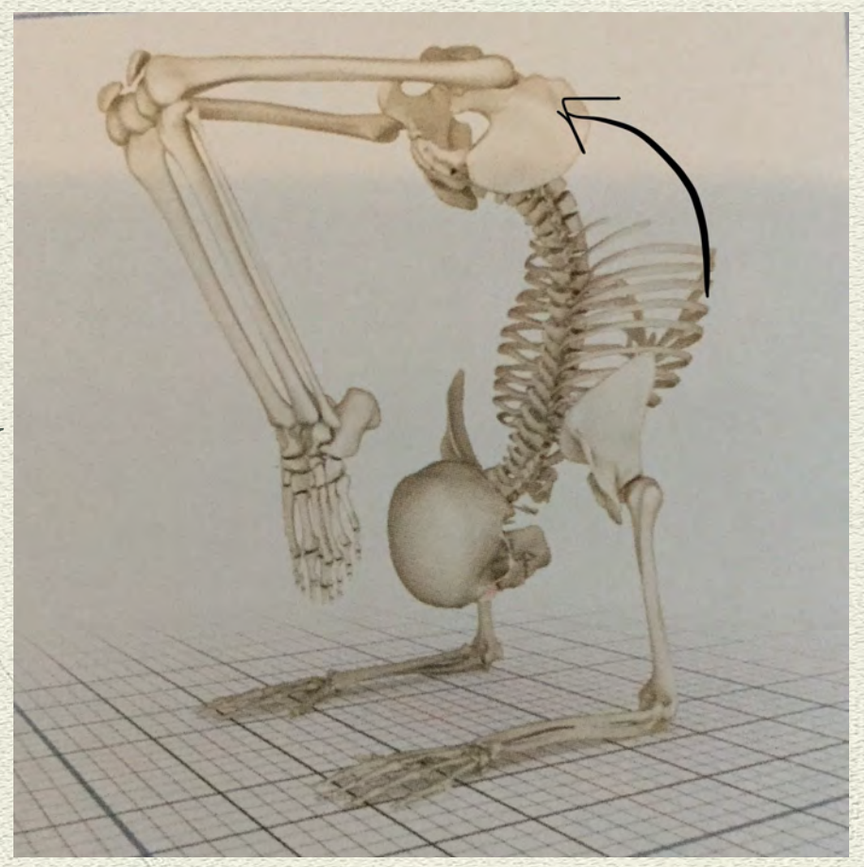


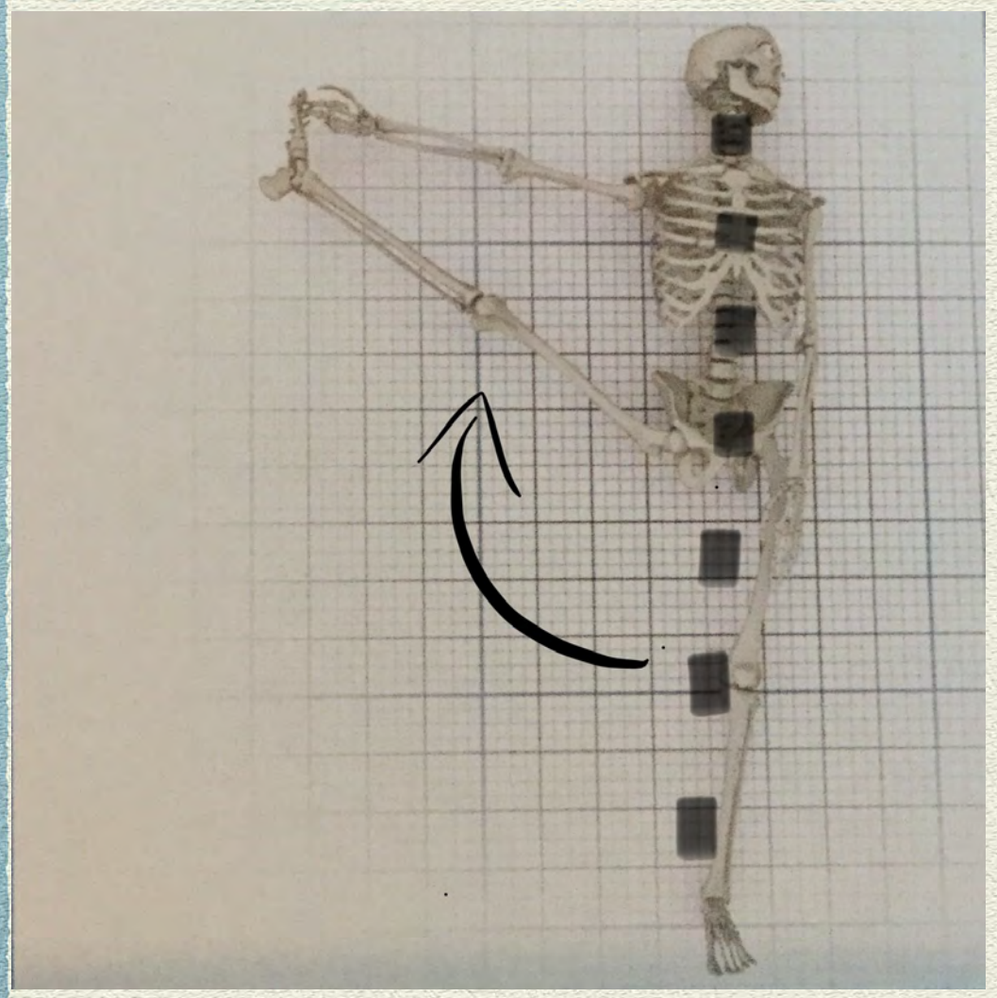
Flexion moves leg into the front body

Tightness in the hip flexors will limit?

Extension moves leg into the back body

Tightness in the hip extensor will limit?

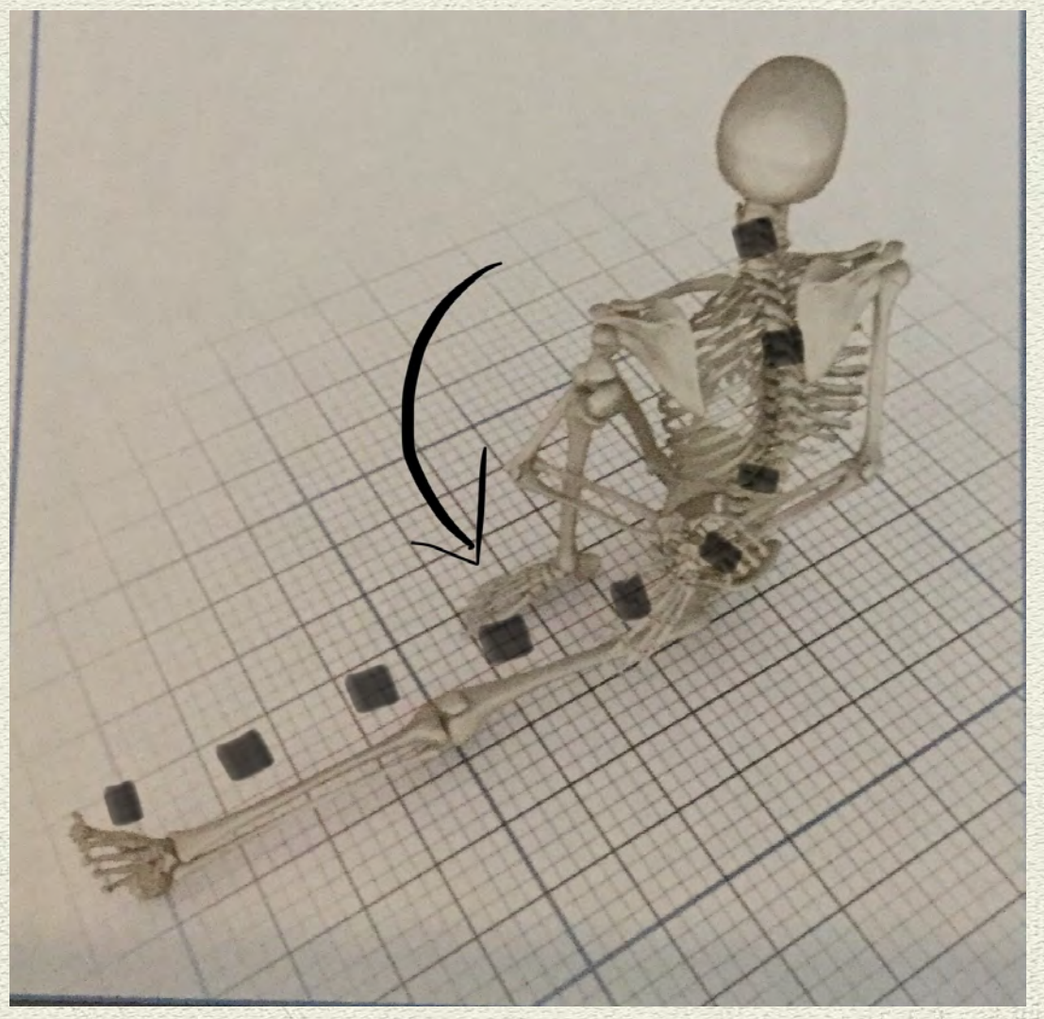




ABDuction

moves leg AWAY from the midline

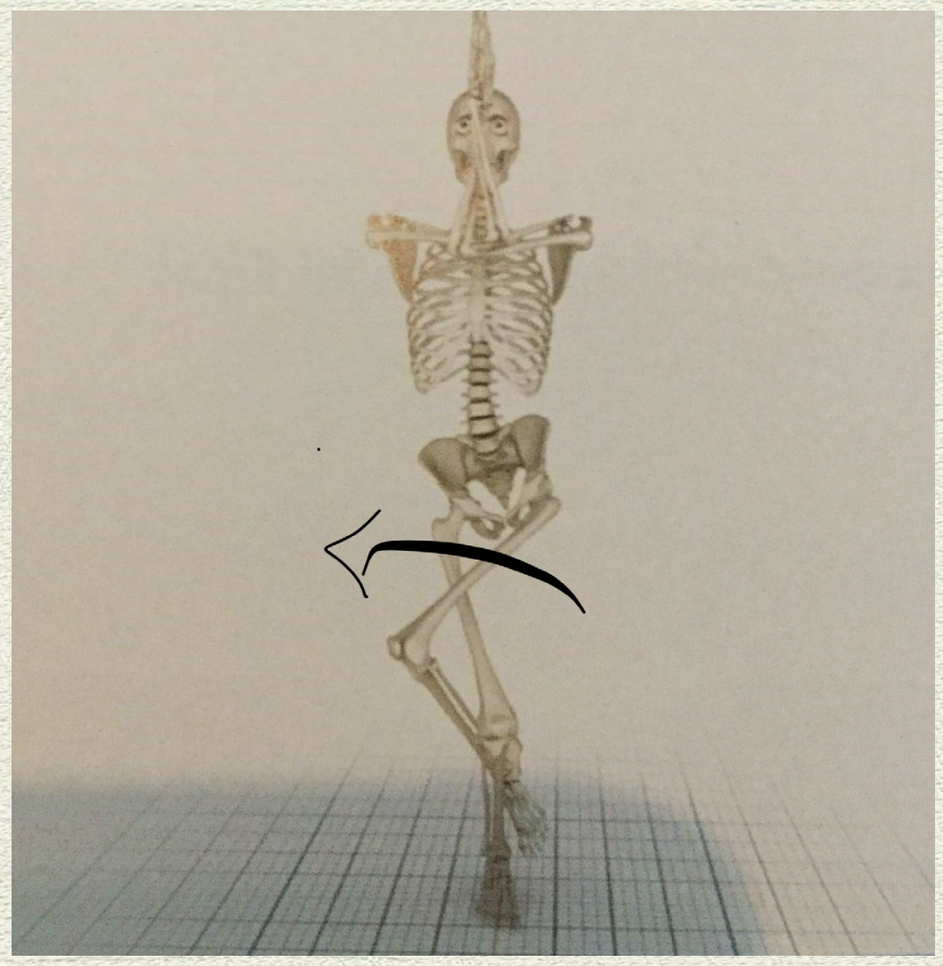
What is limited if the ABDuctors are stiff?



ADDuction

moves leg TOWARD midline

If the ADDuctors are stiff, what pose(s) May be difficult?



Internal Rotation

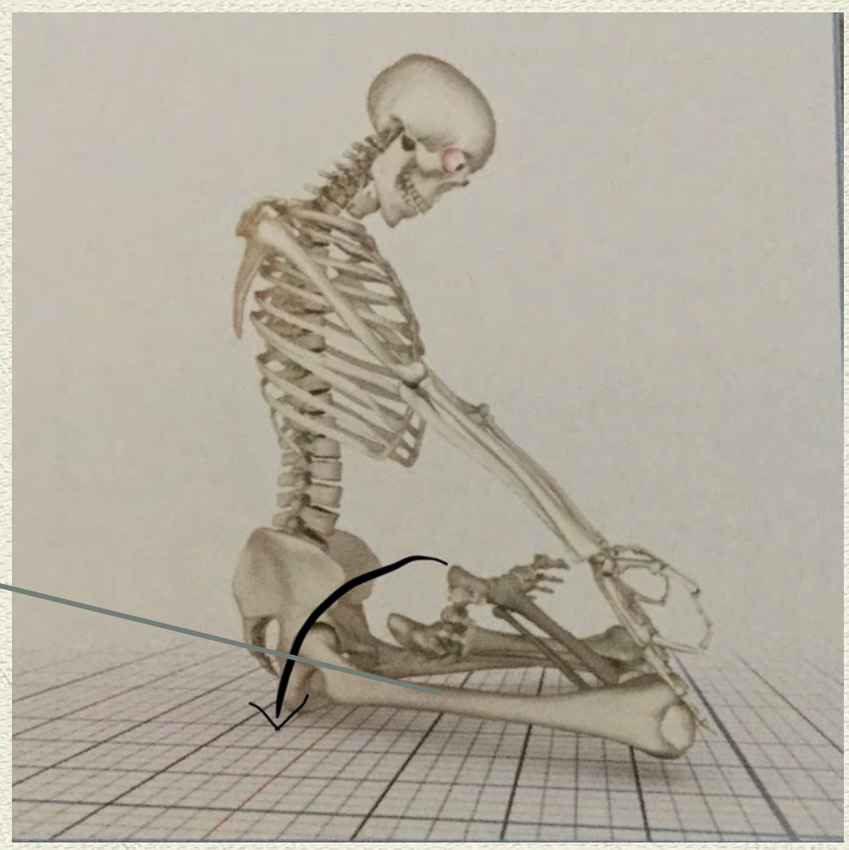
Rotates leg inward

In bridge pose, which direction will these muscles move the knees?

External Rotation

Rotates leg outward

Which pose(s) require plenty of external rotation at the hip?



# THE PELVIS

Front pour

Low back arches

Cat /Cow?


Back pour

Low back flattens

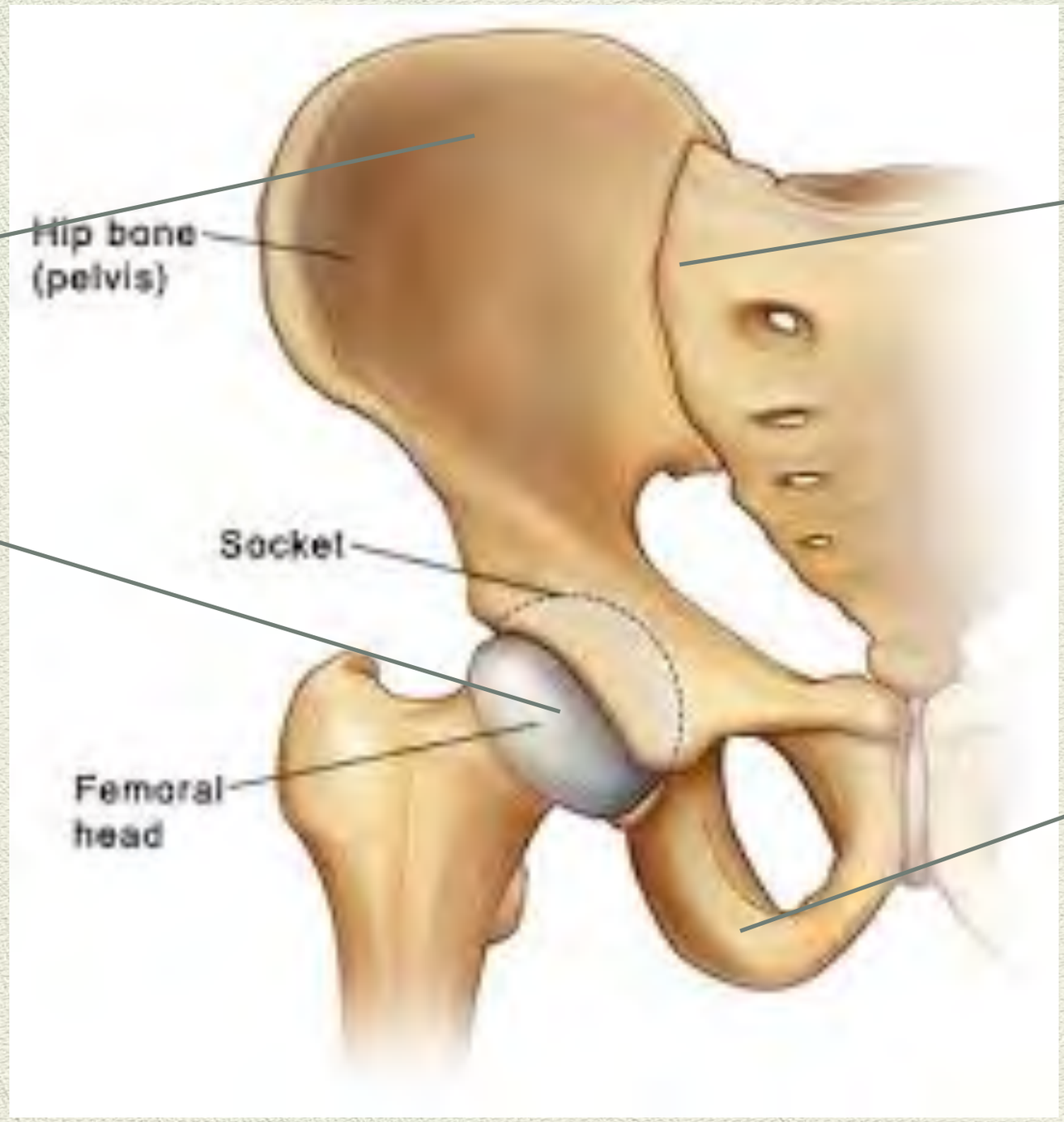
# Pelvic girdle

*Our lower body is anatomically designed to hold our body weight. As such, our hip is more STABLE than MOBILE*

# The Hip Girdle

Ilium

Ball/socket joint




Sacrum and SI joint

Ischial Tuberosity "sits bones"

# ILIOPSOAS

Psoas originates from the lumbar spine

Iliacus  originates from the pelvis

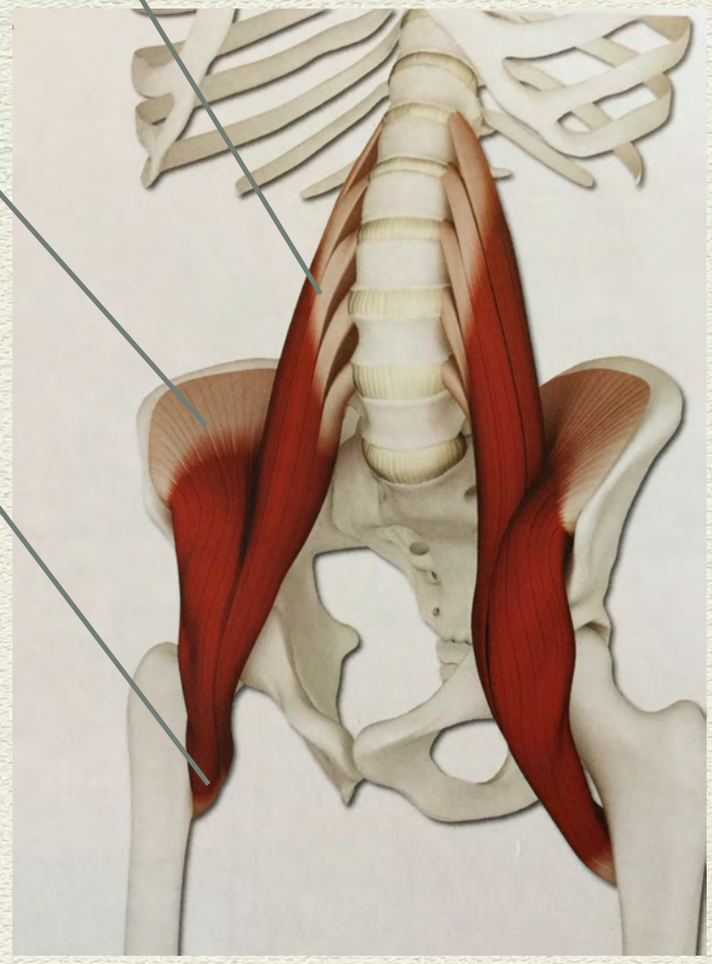
Common insertion on femur

Function

Flexes and externally rotates the hip

Generates Posterior pelvic tilt

Flexes the lumbar spine



What happens

If this muscle is tight?

Hint:

Effect can happen at femur

Or lumbar spine

Stretching

Psoas

Iliacus

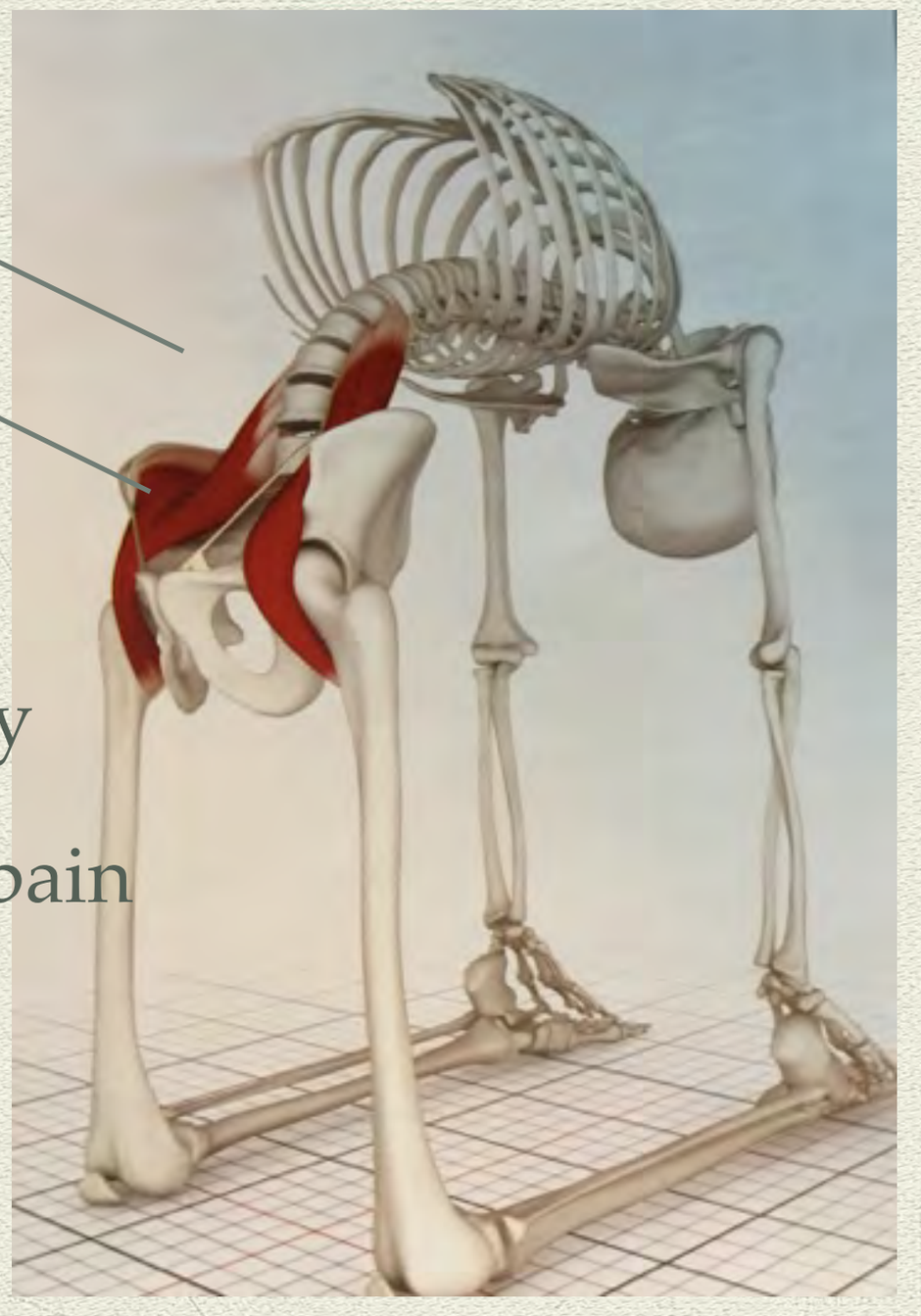
This muscle is commonly

Tight and weak

Particularly if one has

A desk job or is seated all day

Very common source of back pain



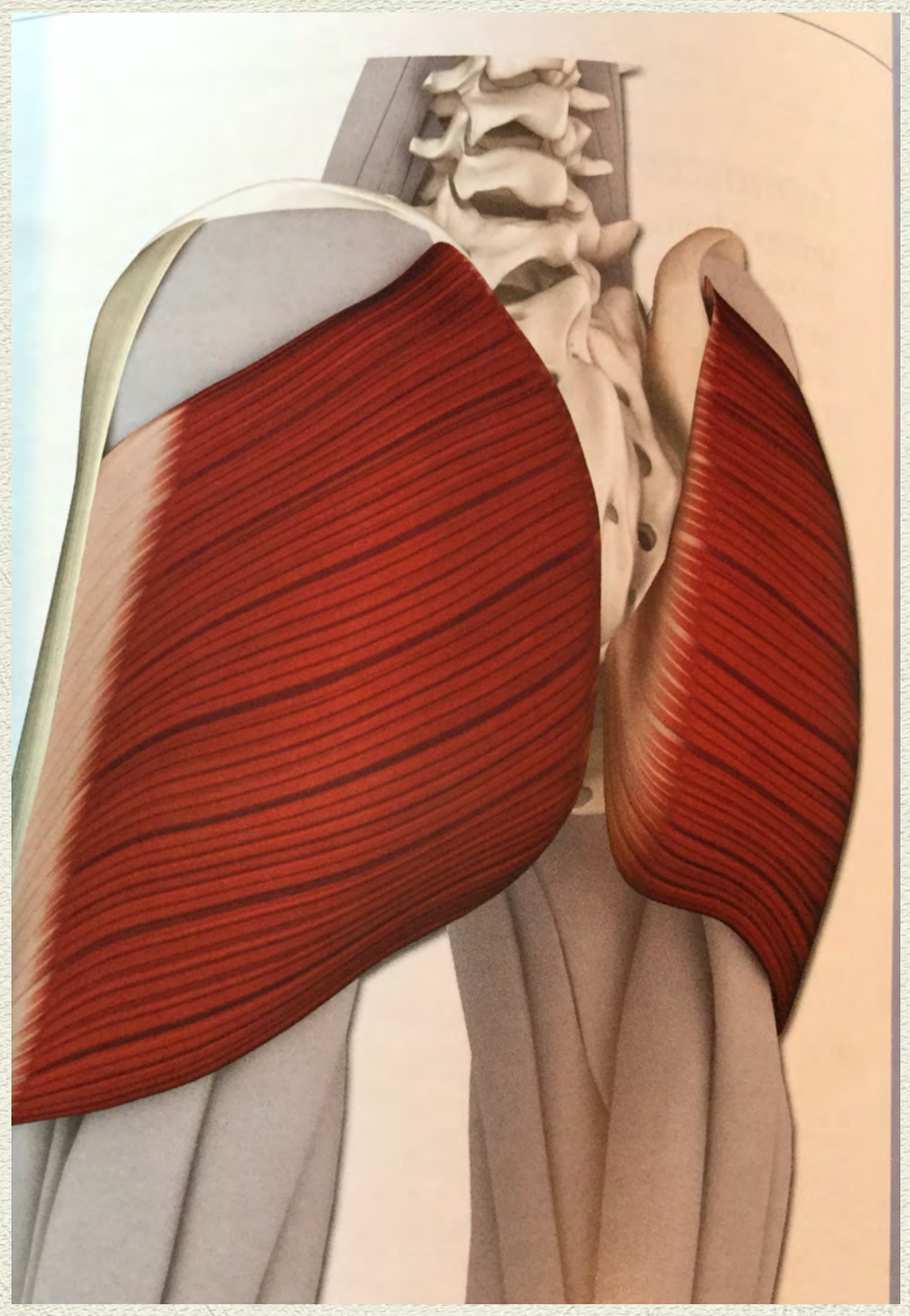
# GLUTEUS MAXIMUS

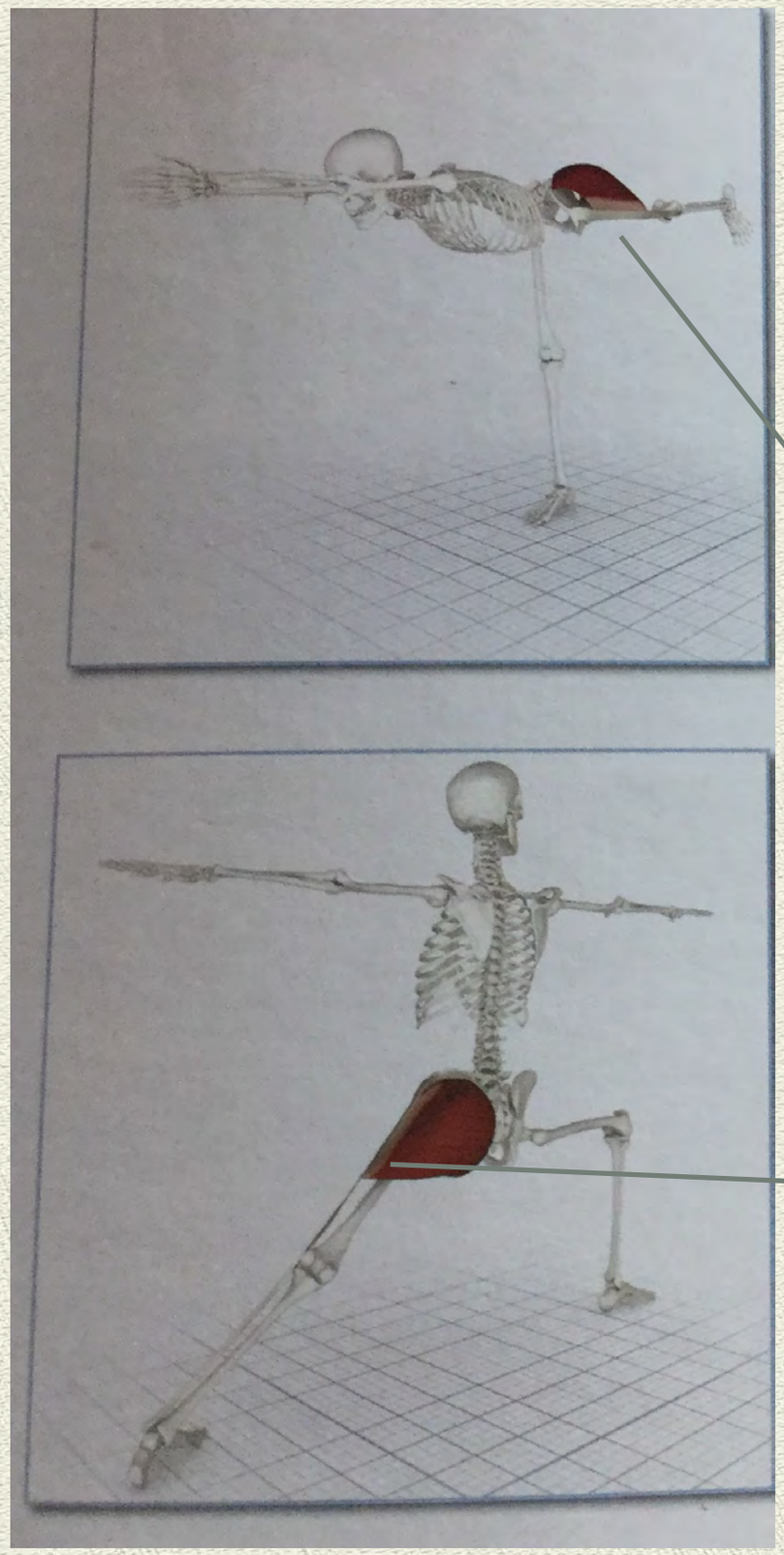
Largest most powerful muscle in the body

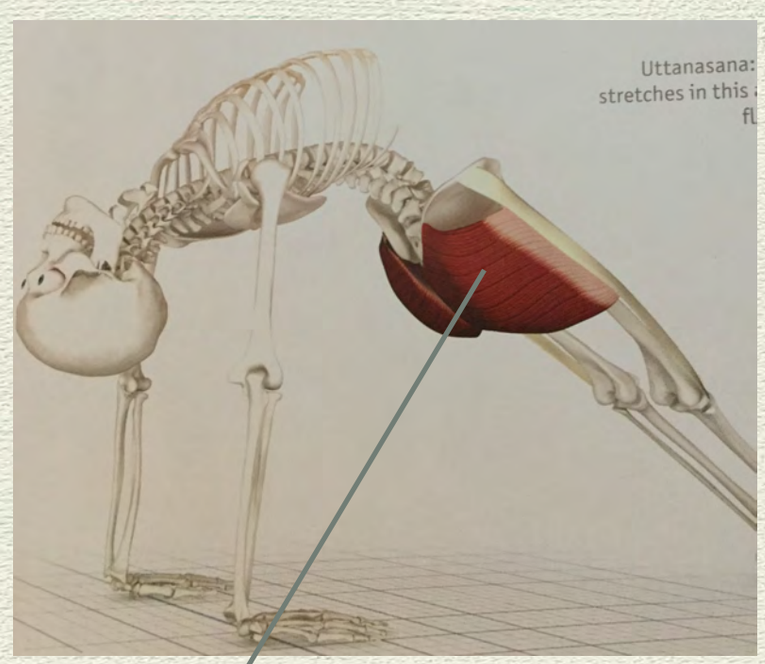
Sitting all day= weakness
Dormant butt syndrome can be cause of chronic back, hip or knee pain

It is our “rocket booster”
It moves us through space

It’s all about the bass..





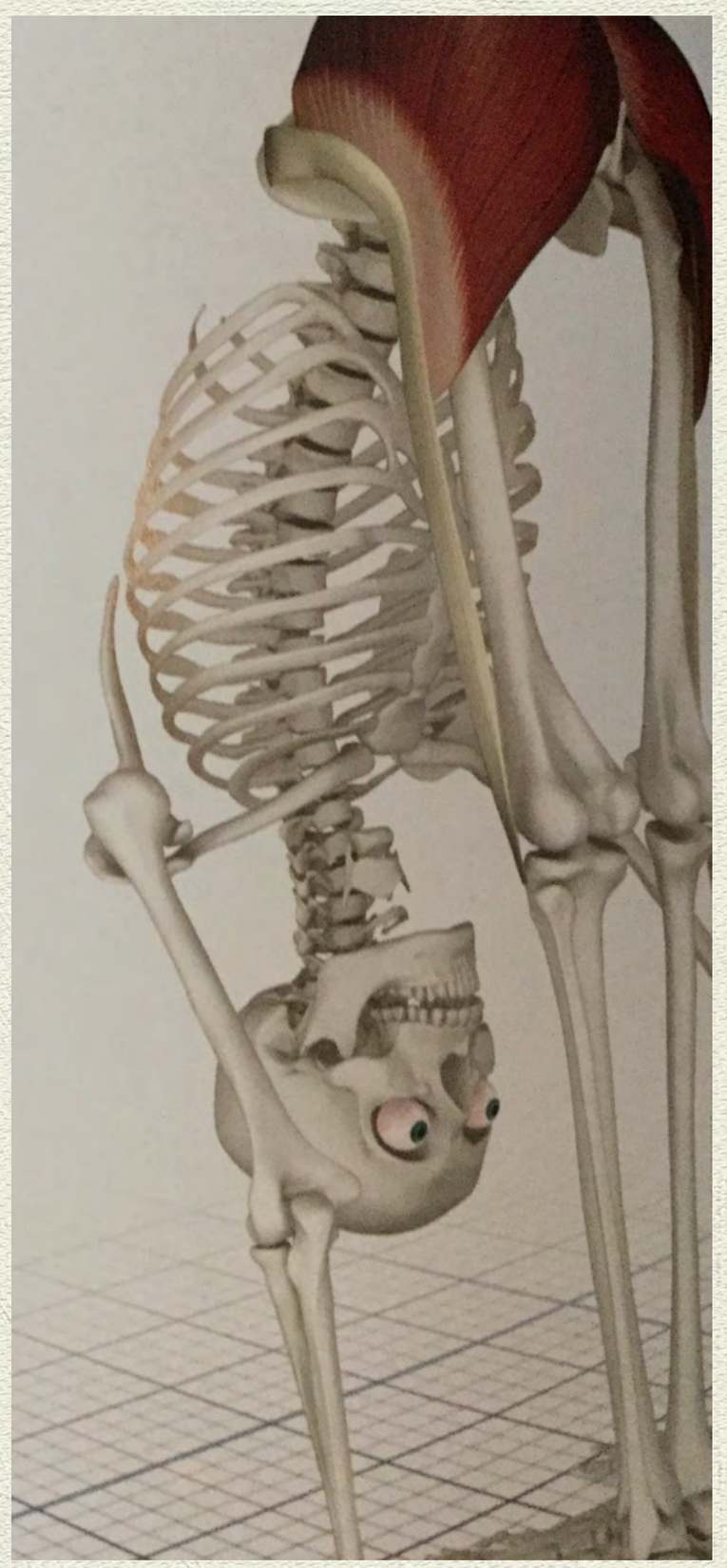



Extends the hip

Externally
rotates the femur

BEST STRETCH?
FORWARD FOLD!
(Standing or sitting)

BEST WAY TO
STRENGTHEN?
Chair, all transitions
into and out of lunges,
stepping or hopping to
top of mat

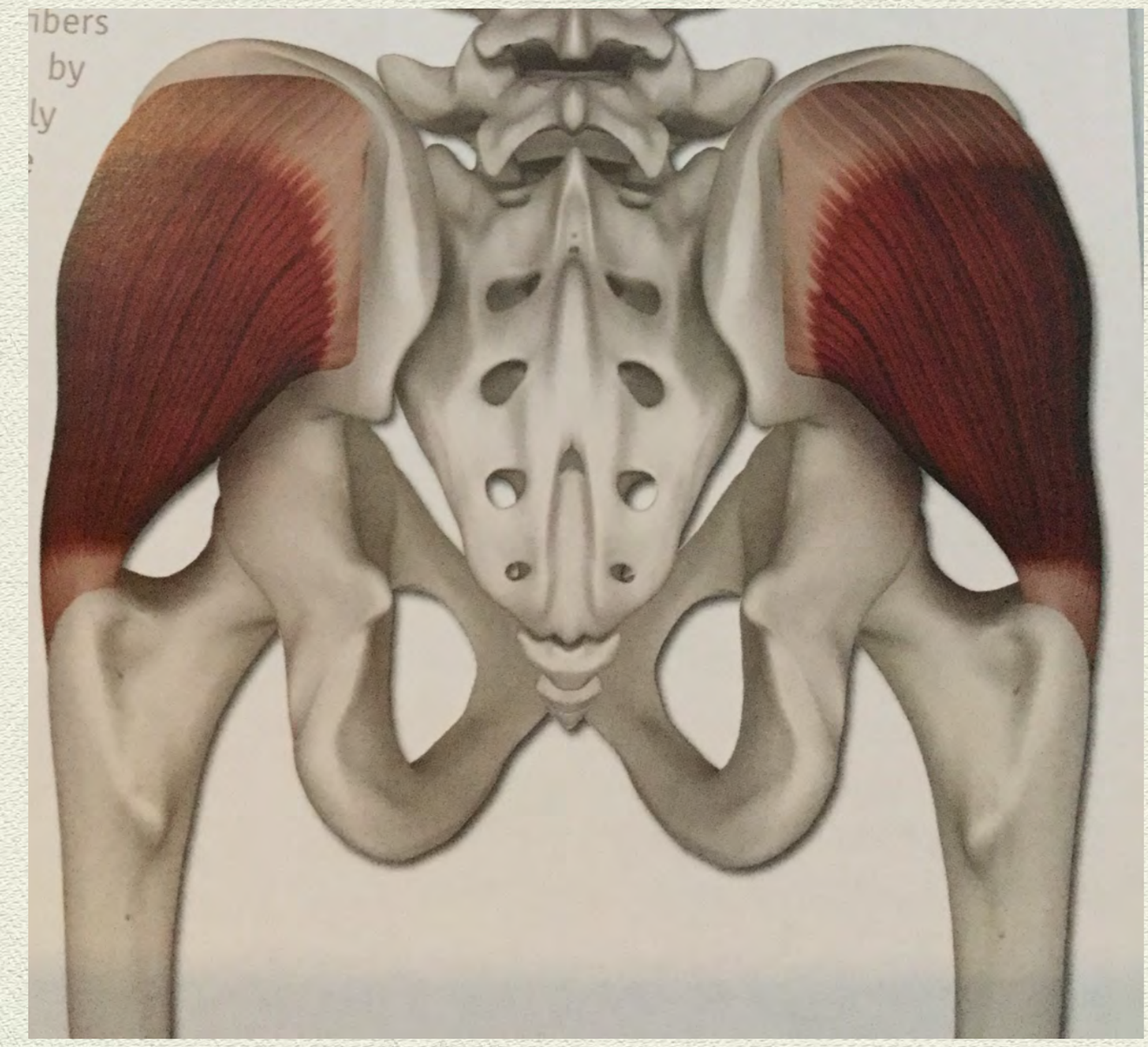


# GLUTEUS MEDIUS

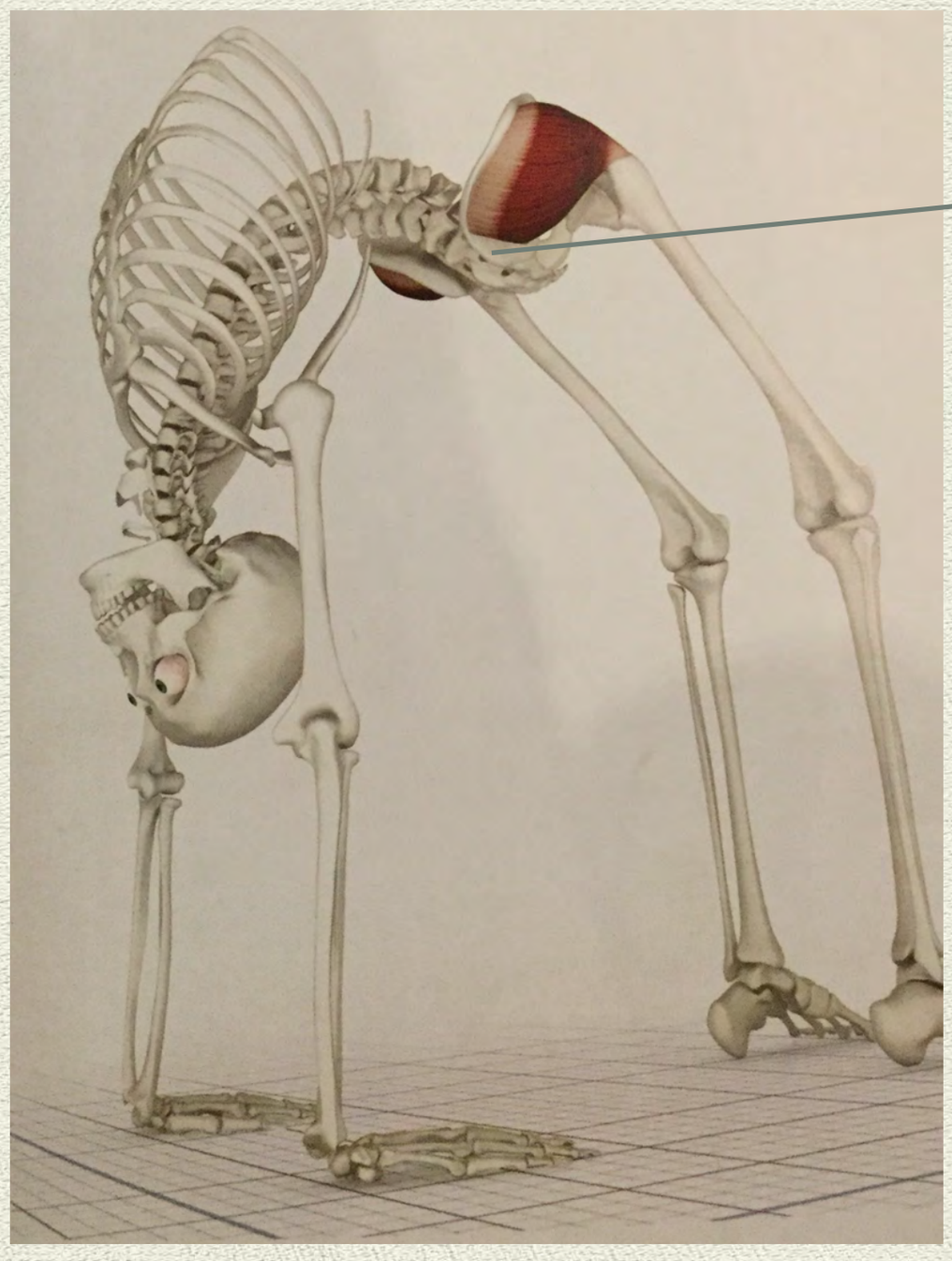
Major stabilizer for single leg stand. Weakness results In "knocked knees" when Walking, running or balancing

ABDucts and externally rotates the leg

Maintains ideal alignment of Front leg during Warrior II

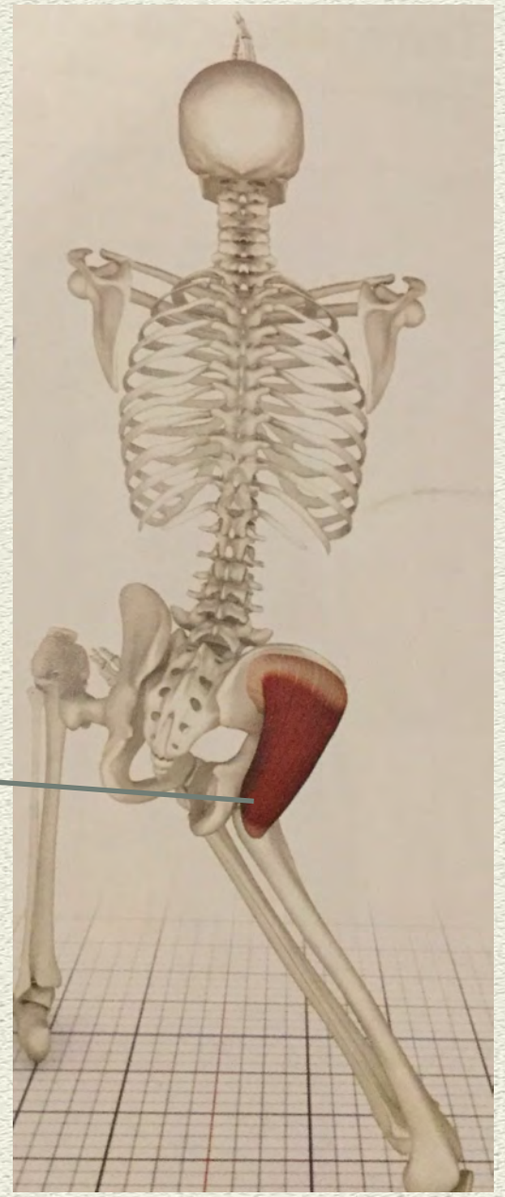


# Gluteus Medius



Stabilizes leg and contraction
Helps "open" the SI joint, which can get compressed in wheel pose

Prevents the "knock knee" position and allows for stable base.

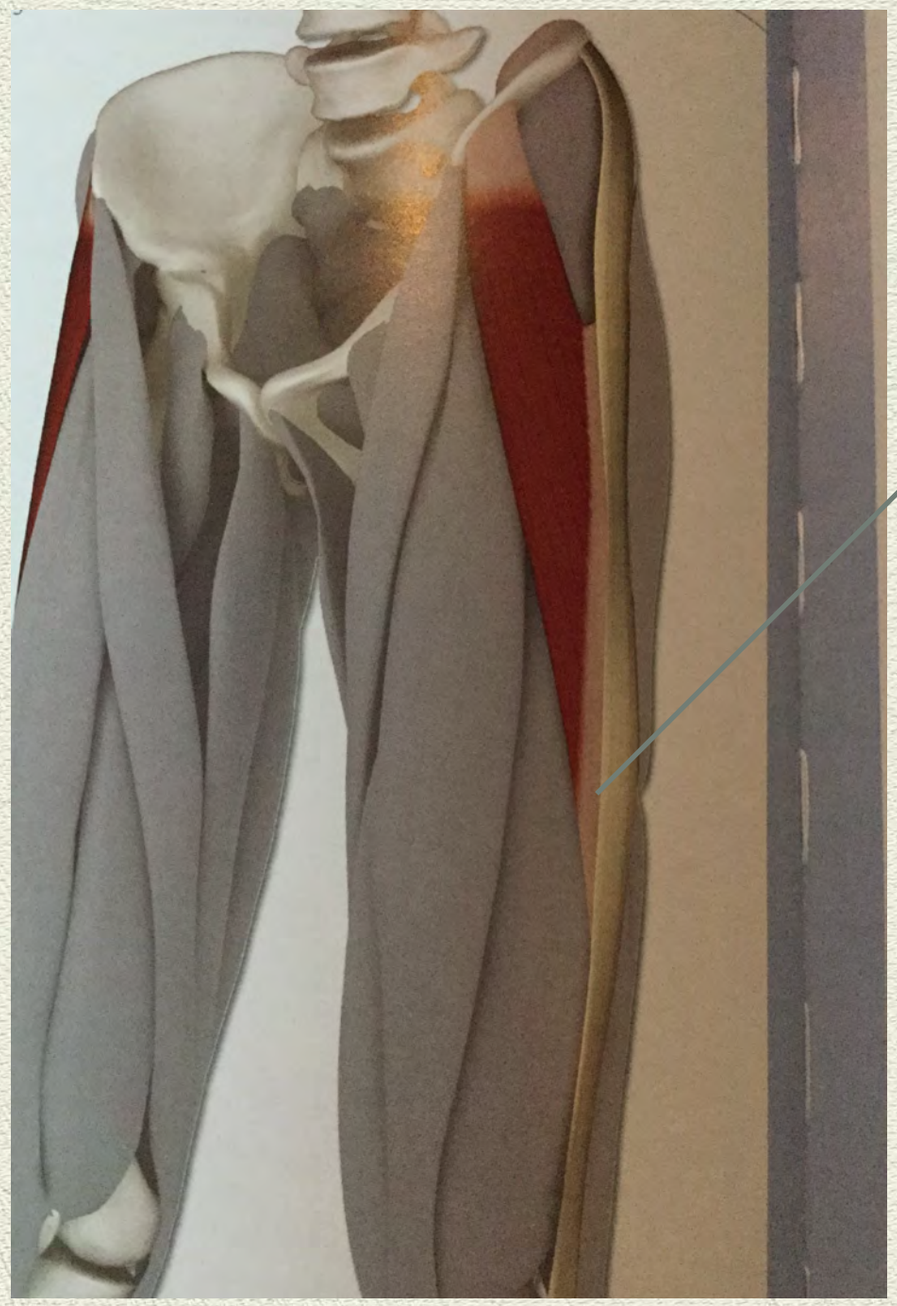


# Tensor Fascia Lata

Flexes, ABDucts and Internally rotates The hip

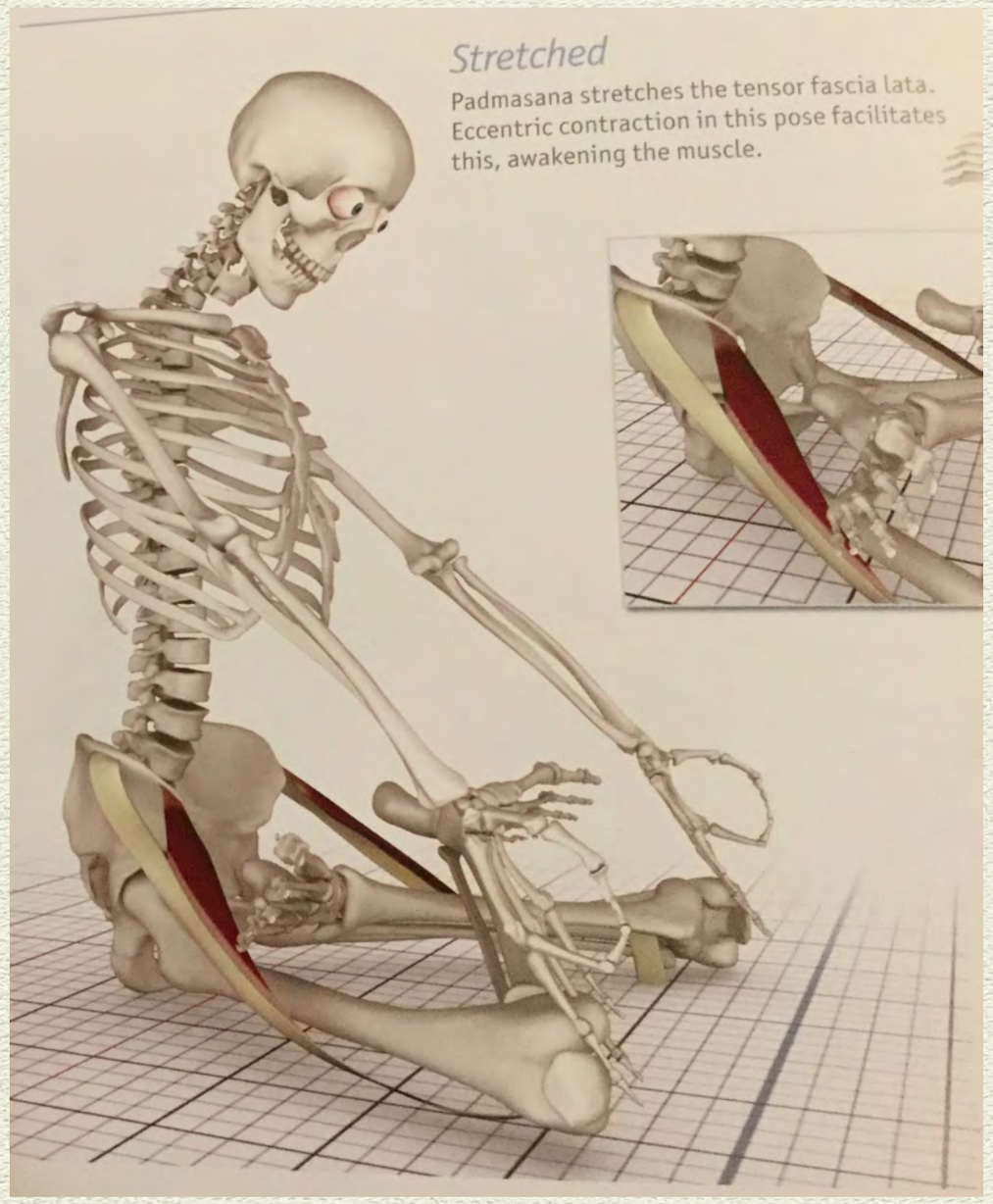
Tightness limits External rotation and what else?

What pose would stretch this?



Inserts on the IT band. Common source of pain, particularly in runners

What pose would strengthen it?




Stretch

Strengthen

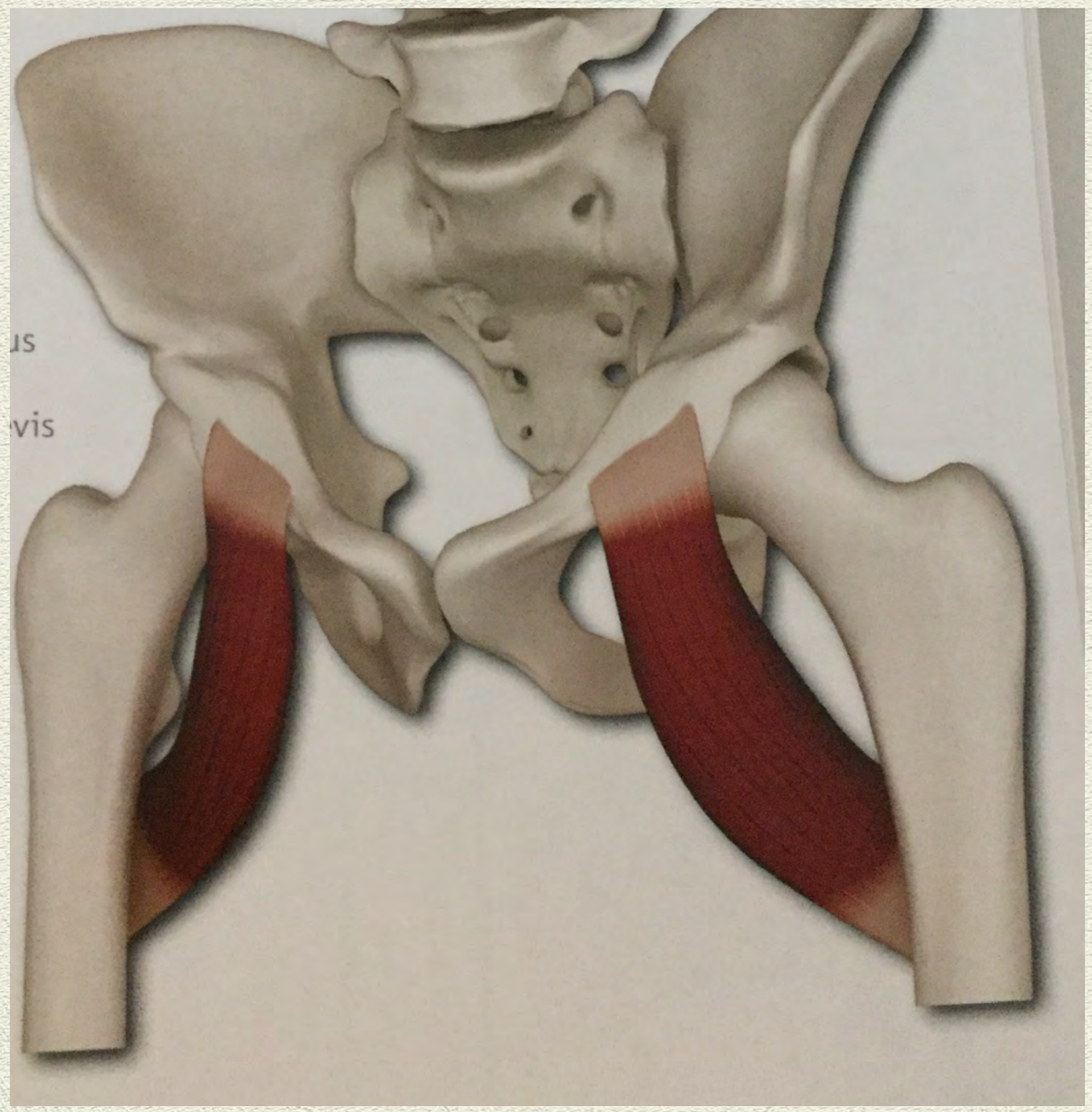
# PECTINEUS

Adducts the hip

Contraction is principle part of
Mula Bandha

Common culprit in
“high groin” injuries

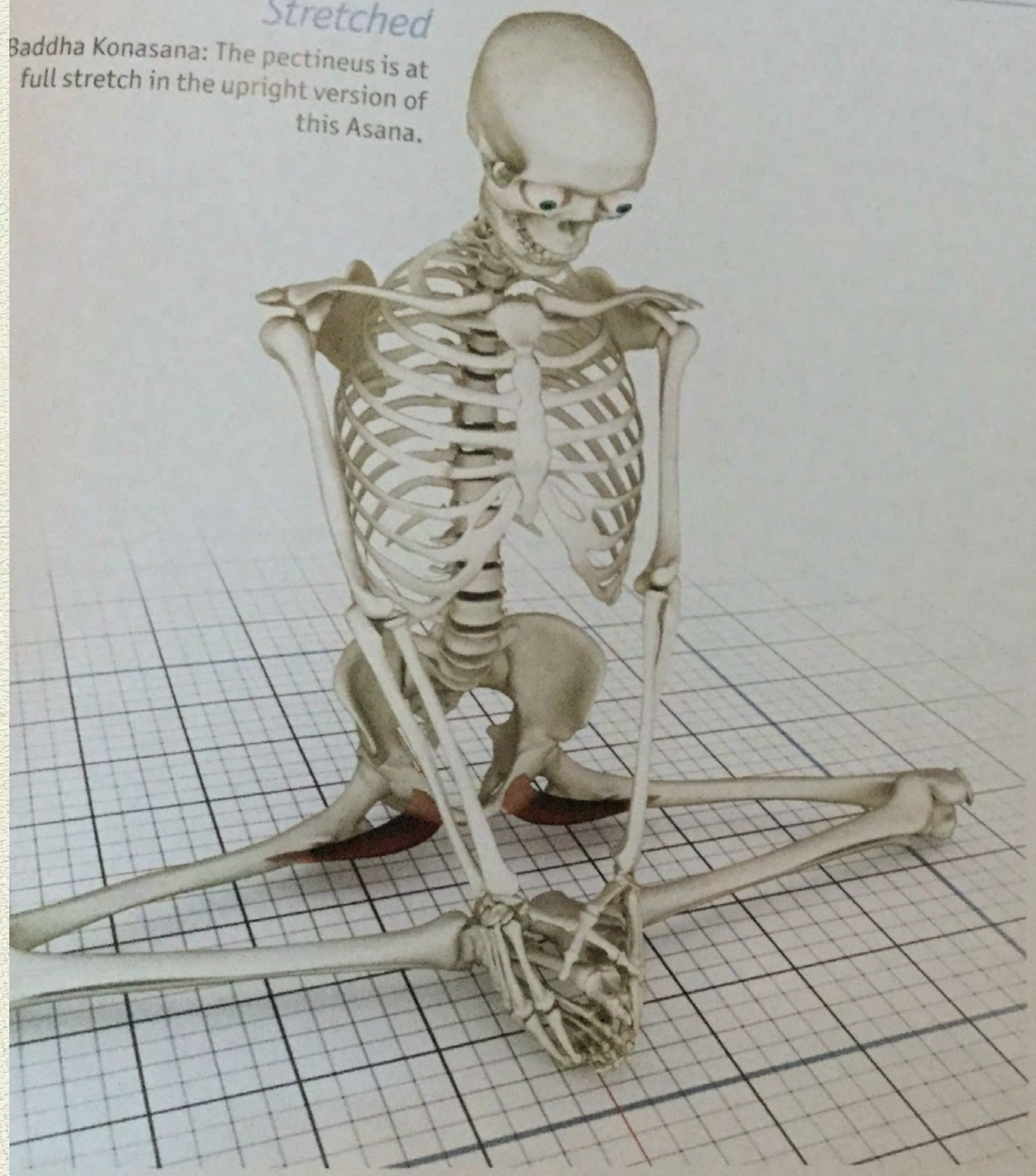
Tightness would limit?



Knees hug inward in crow pose

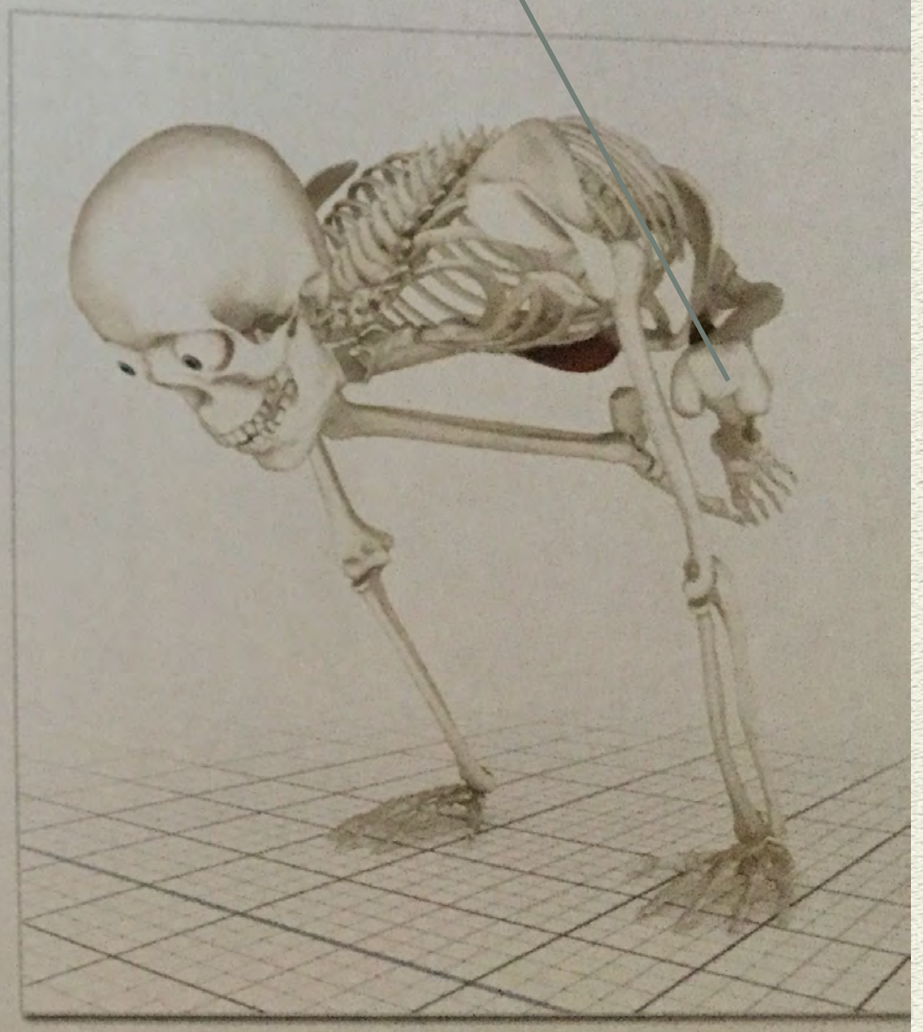
*Stretched*

Baddha Konasana: The pectineus is at full stretch in the upright version of this Asana.



*Contracted*

Bakasana: Contracting the adductor group stabilizes this Asana.



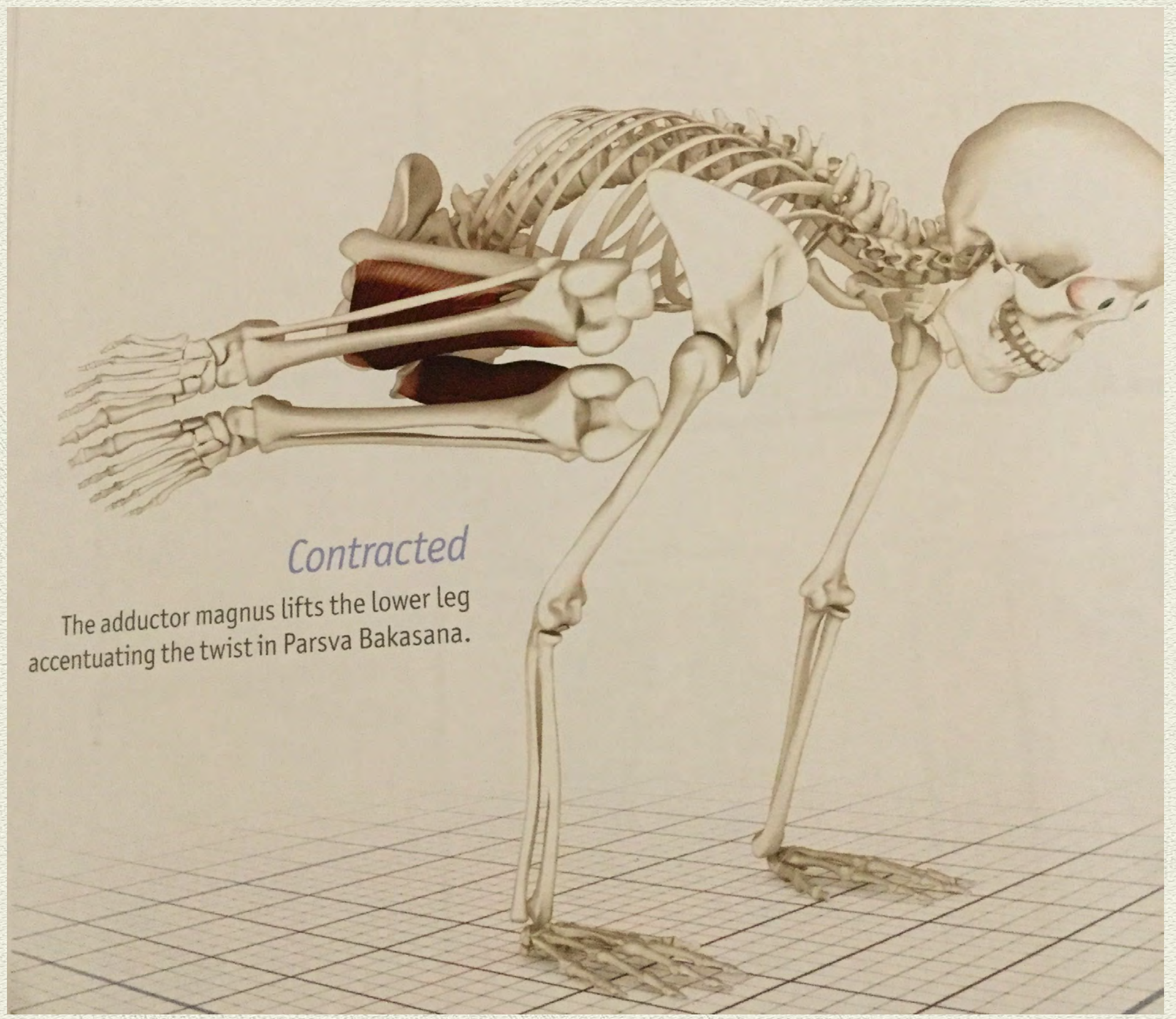
# ADDUCTOR MAGNUS

Largest muscle of the "inner thigh" Functions as a powerful ADDuctor.

Tightness would limit what action at the hip?

In Warrior II, how could you activate this muscle?

Commonly injured in "splits" position (intentional or accidental)

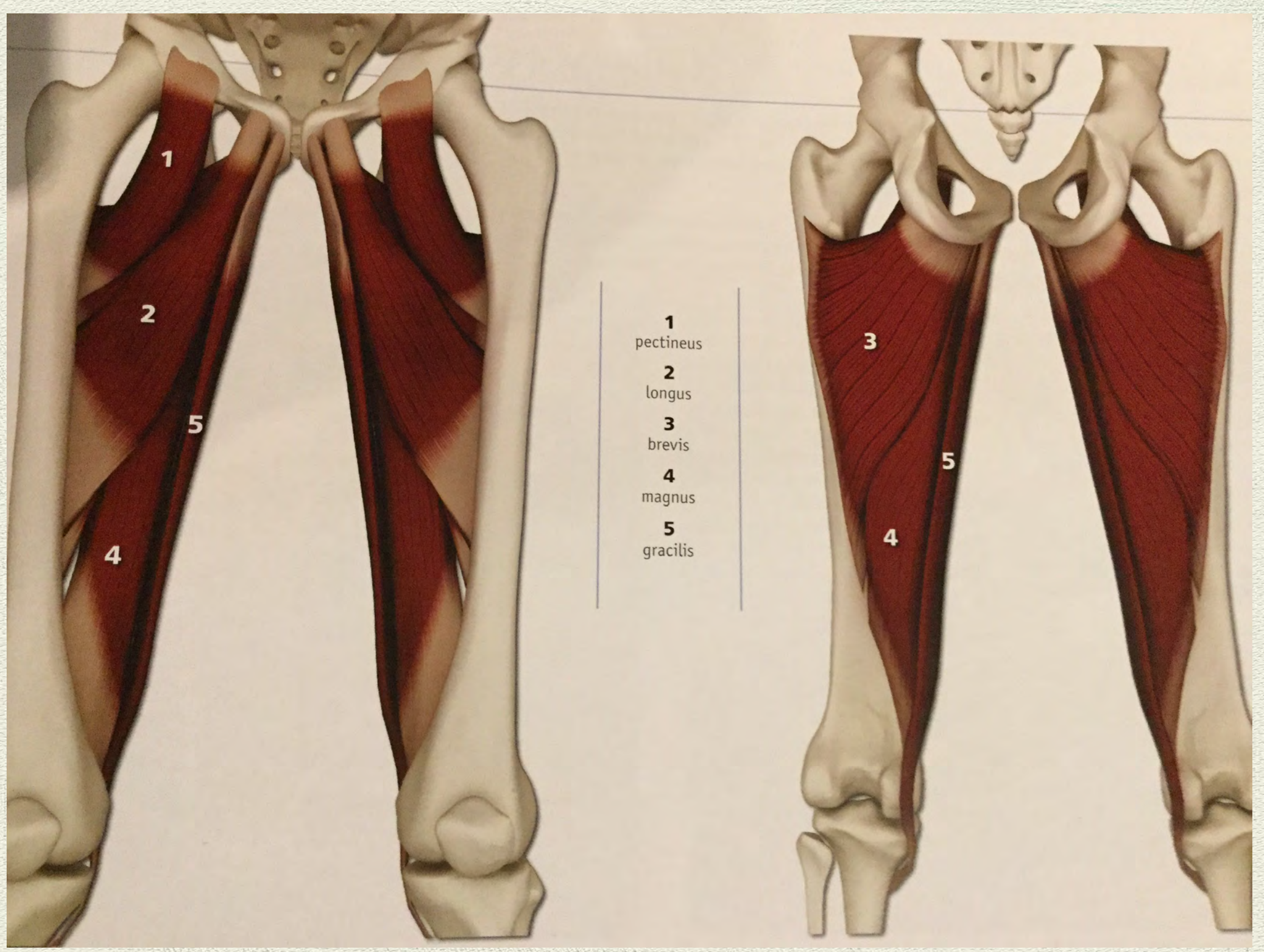


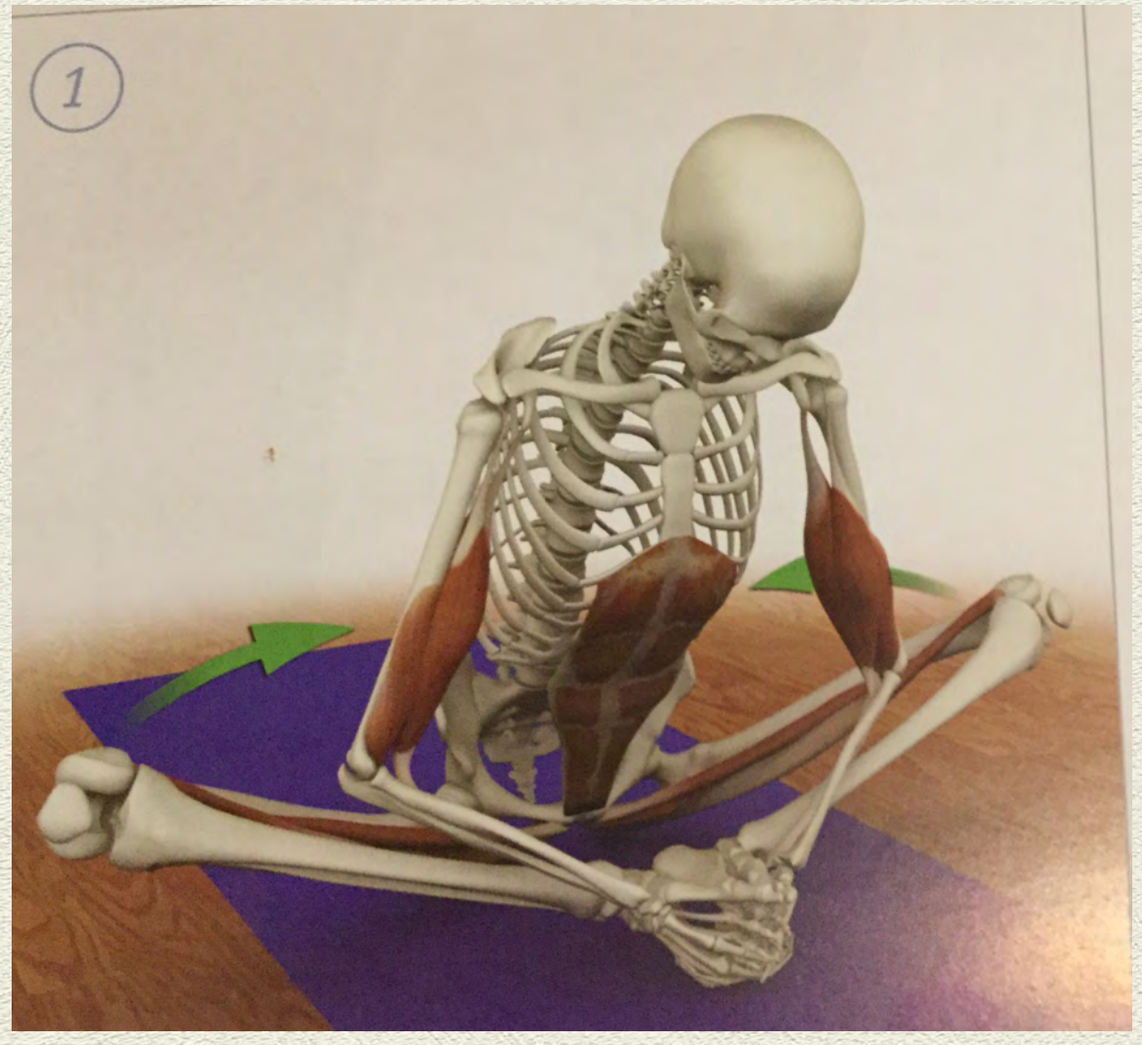
*Contracted*

The adductor magnus lifts the lower leg accentuating the twist in Parsva Bakasana.

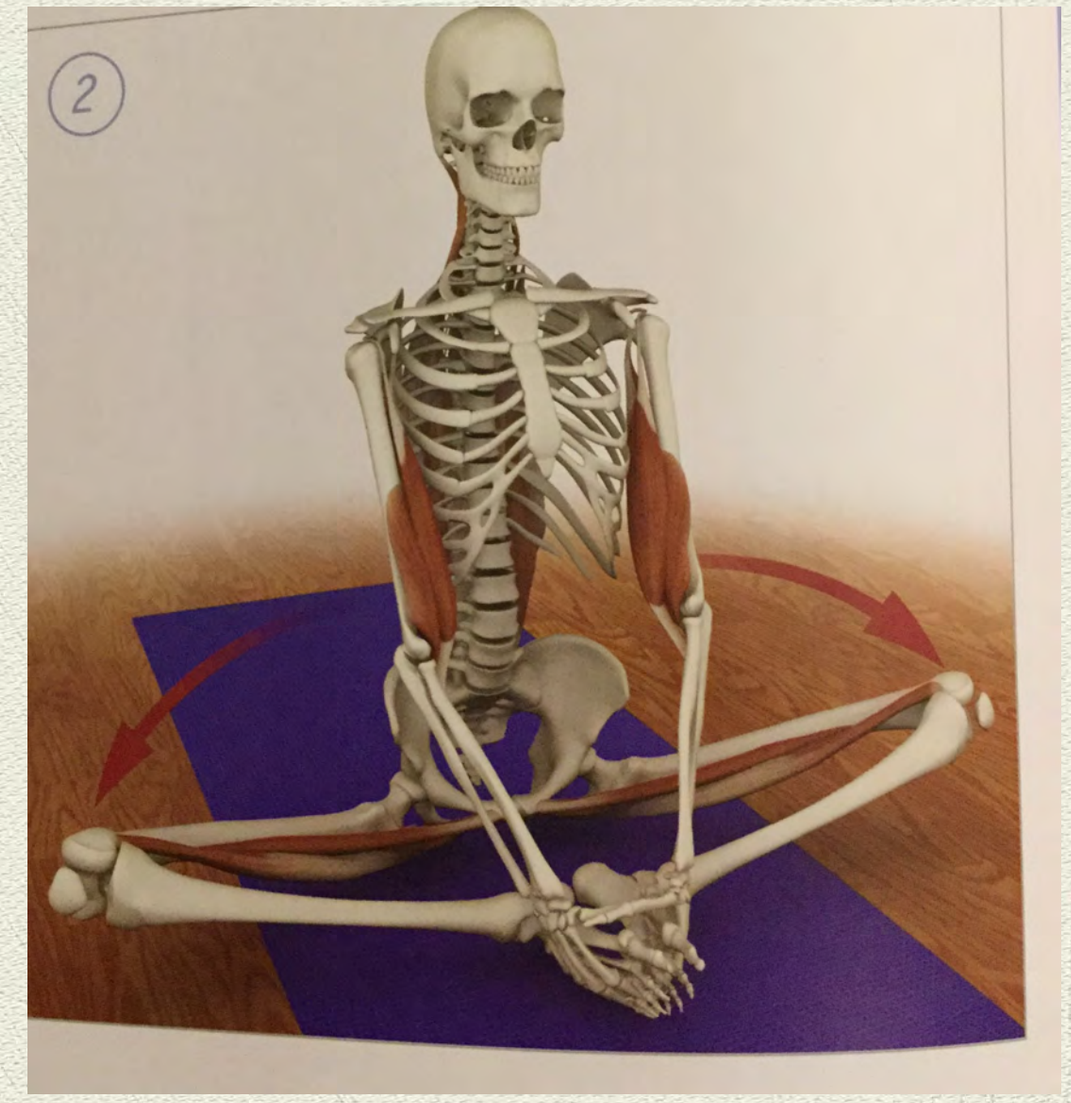
Great opener for the adductor magnus and the rest of the adductor group

# THE REST OF THE ADDUCTOR GROUP

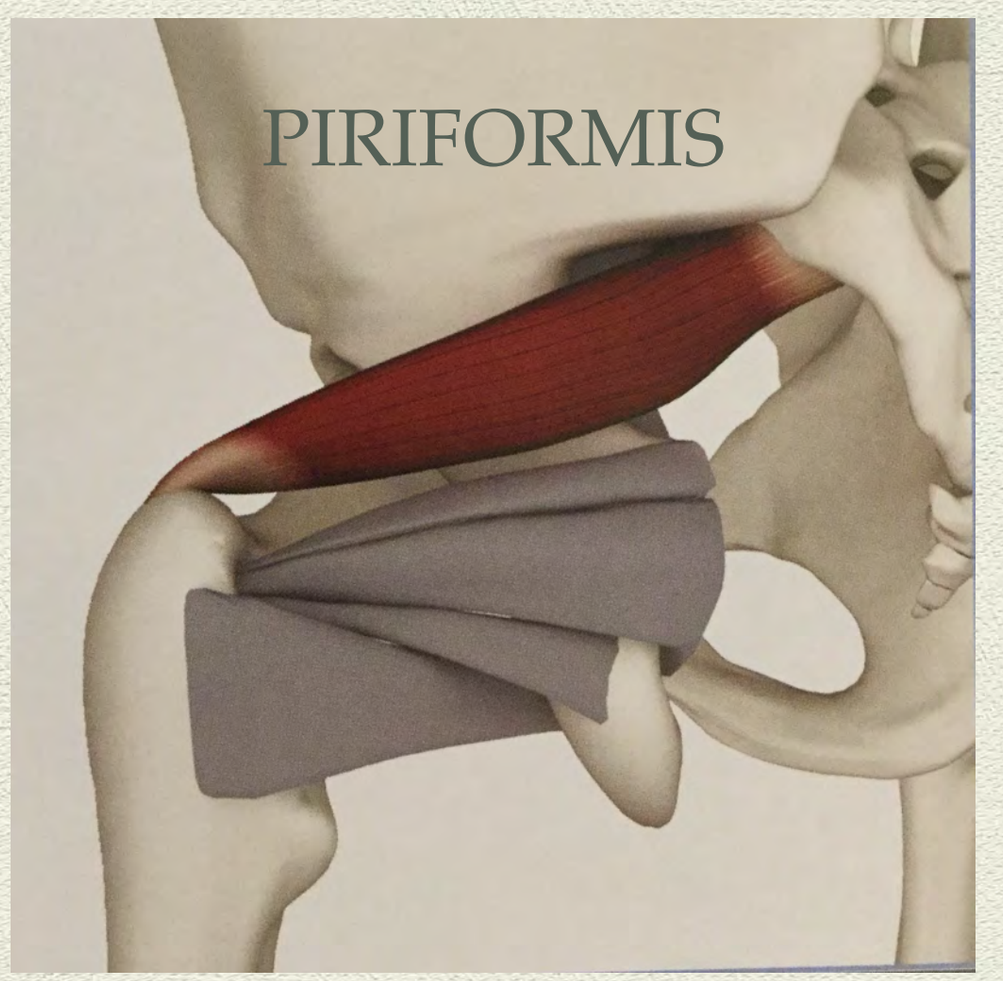




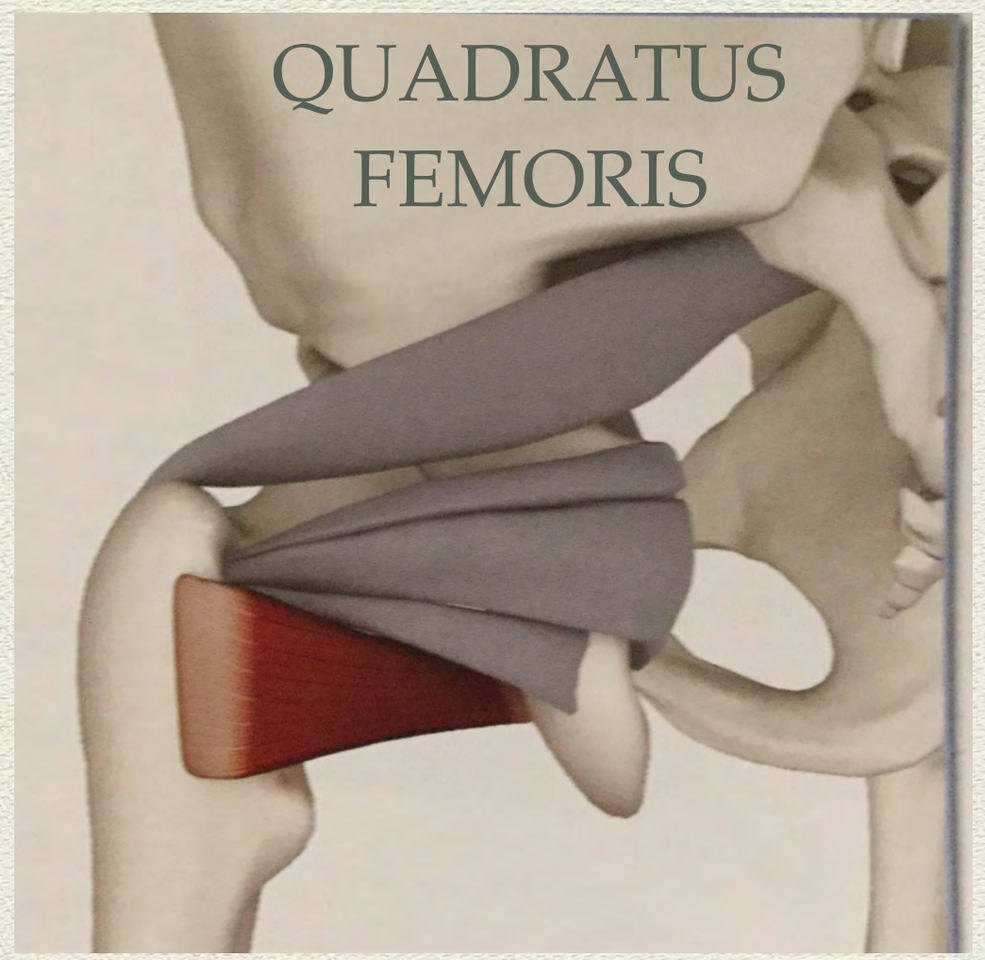

Which muscle group could you contract to stretch the adductors?



# EXTERNAL ROTATORS
## Rotator cuff of the hip




Sciatic nerve runs behind piriformis. Stiffness or weakness in this muscle can cause sciatica




Works with rest of cuff to rotate the hip outward

# Motions of the knee

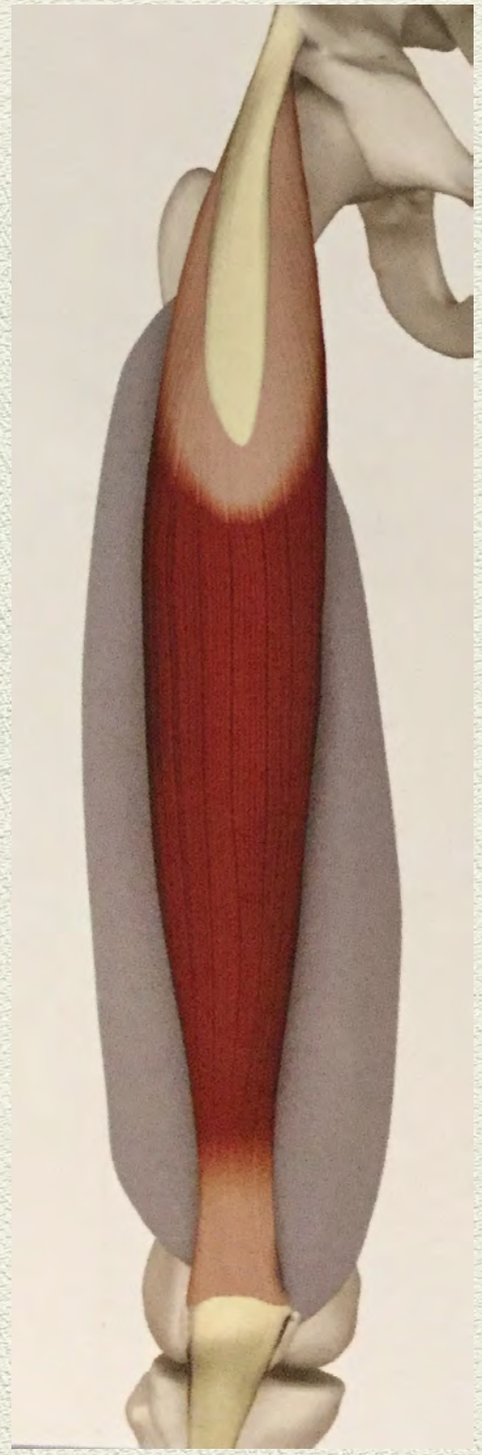
Knee flexion

Knee Extension

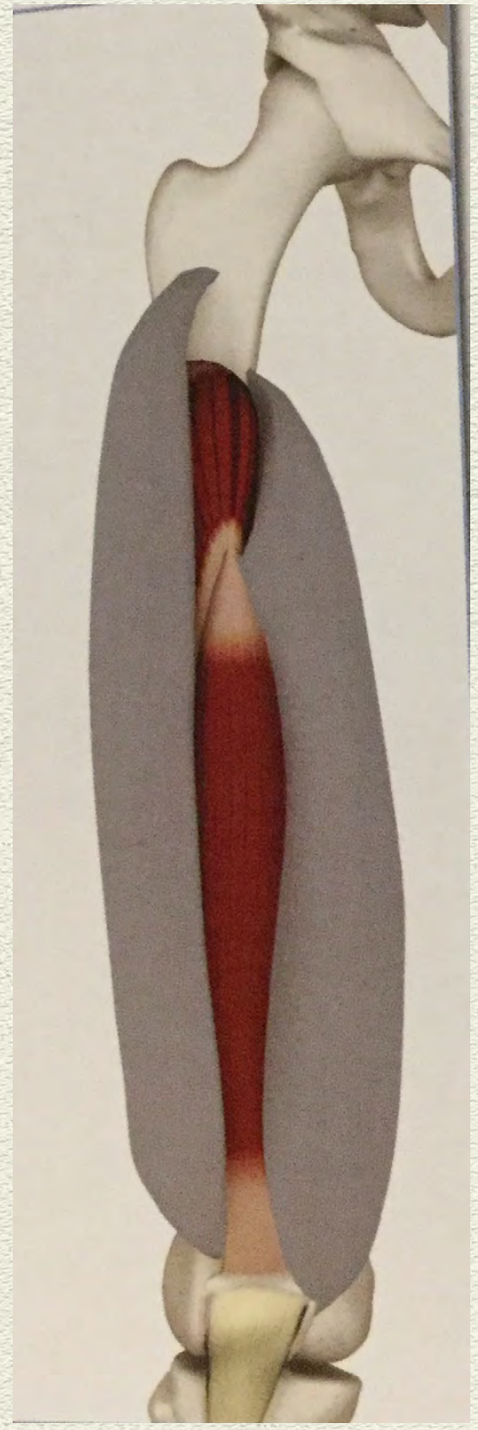
# THE QUADRICEPS

- Large, powerful muscle on the front of the the thigh
- Name means “4 headed” . It is comprised of 4 district parts
- Crosses 2 joints; the hip and the knee.
- Acts to FLEX the hip and EXTEND THE KNEE
- The distal tendon houses the patella (kneecap)
- Key muscle in yoga. Provide support for all standing poses. Contracting them prevents hyperextension at the knee and  stretches the hamstring

Quad



Rectus femoris

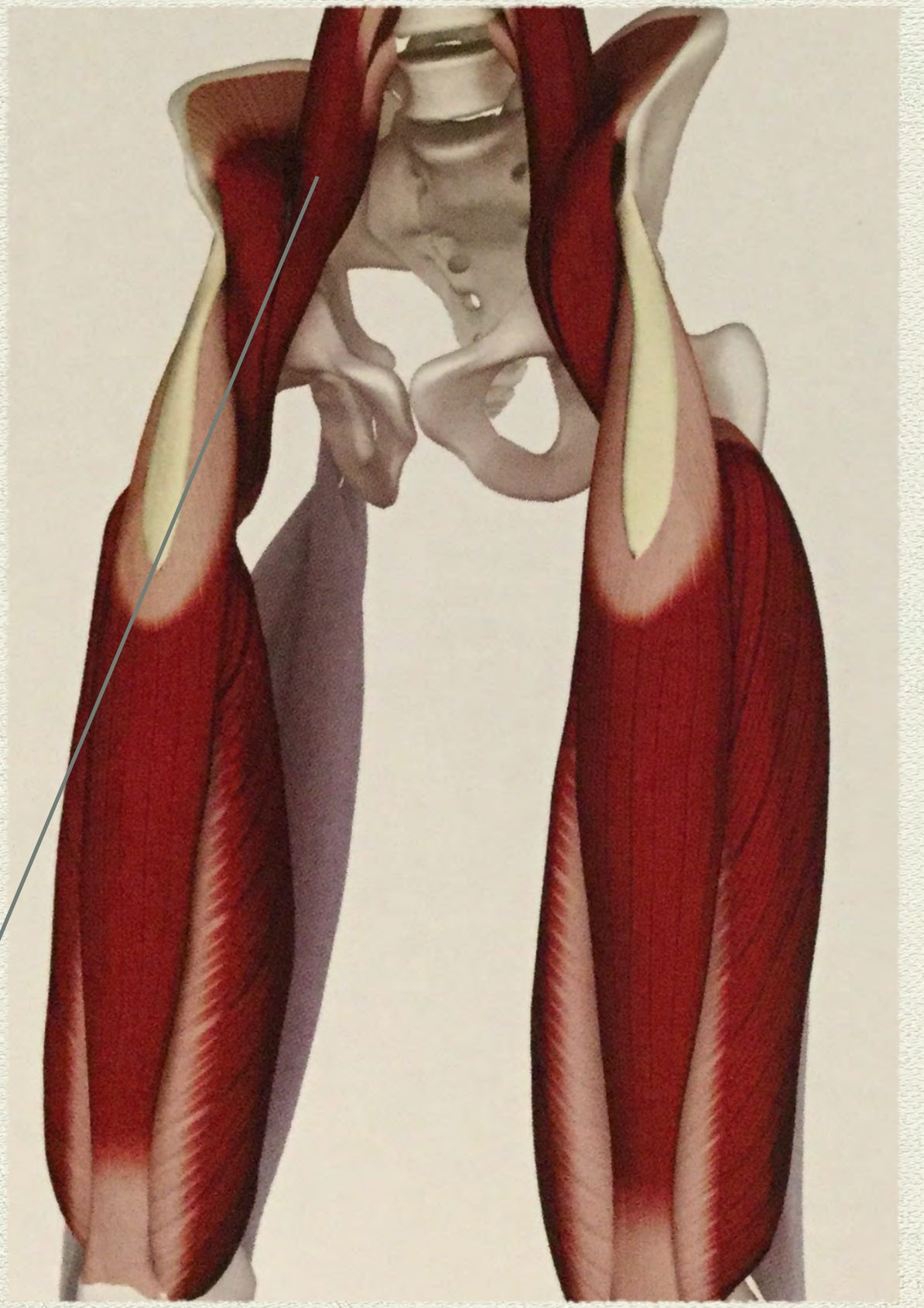


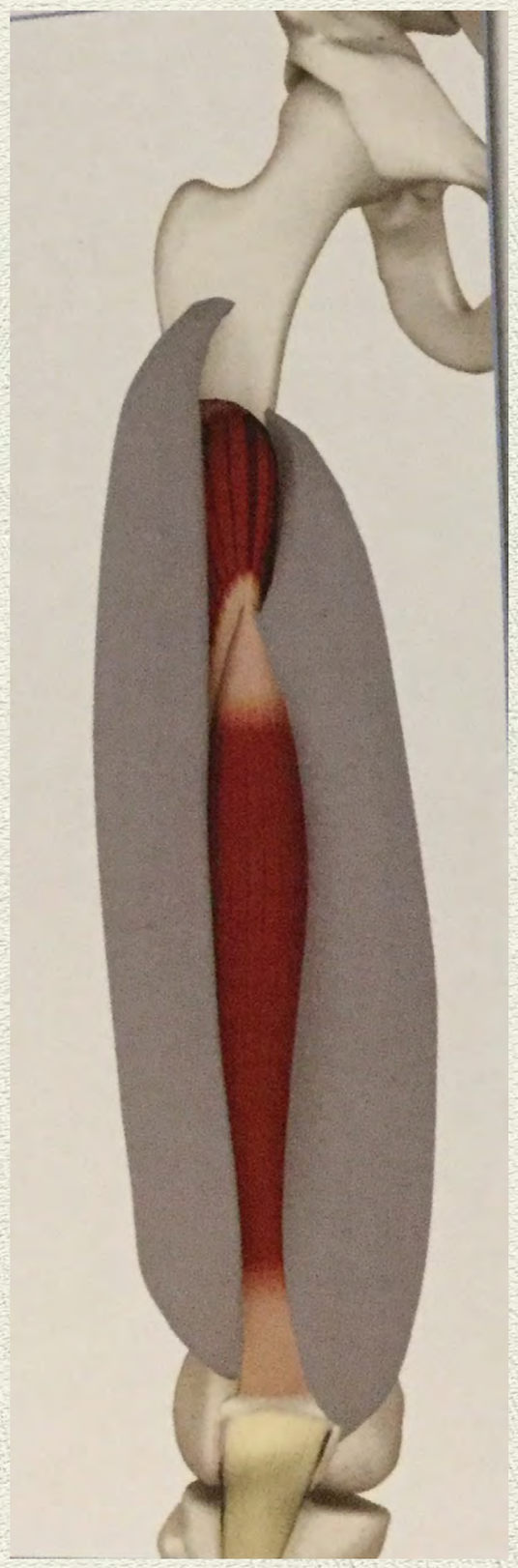
Vastus Intermedius

V. Medius & V. Lateralis

# Rectus Femoris

*Originates on the front of the pelvis*
*Extends below the knee, inserts on the tibia*
*Blends into the quadriceps tendon which houses the patella*
*Works to flex the hip and extend the knee (only part of the quad to act on the hip)*
*Works as a powerful hip flexor with this muscle?*



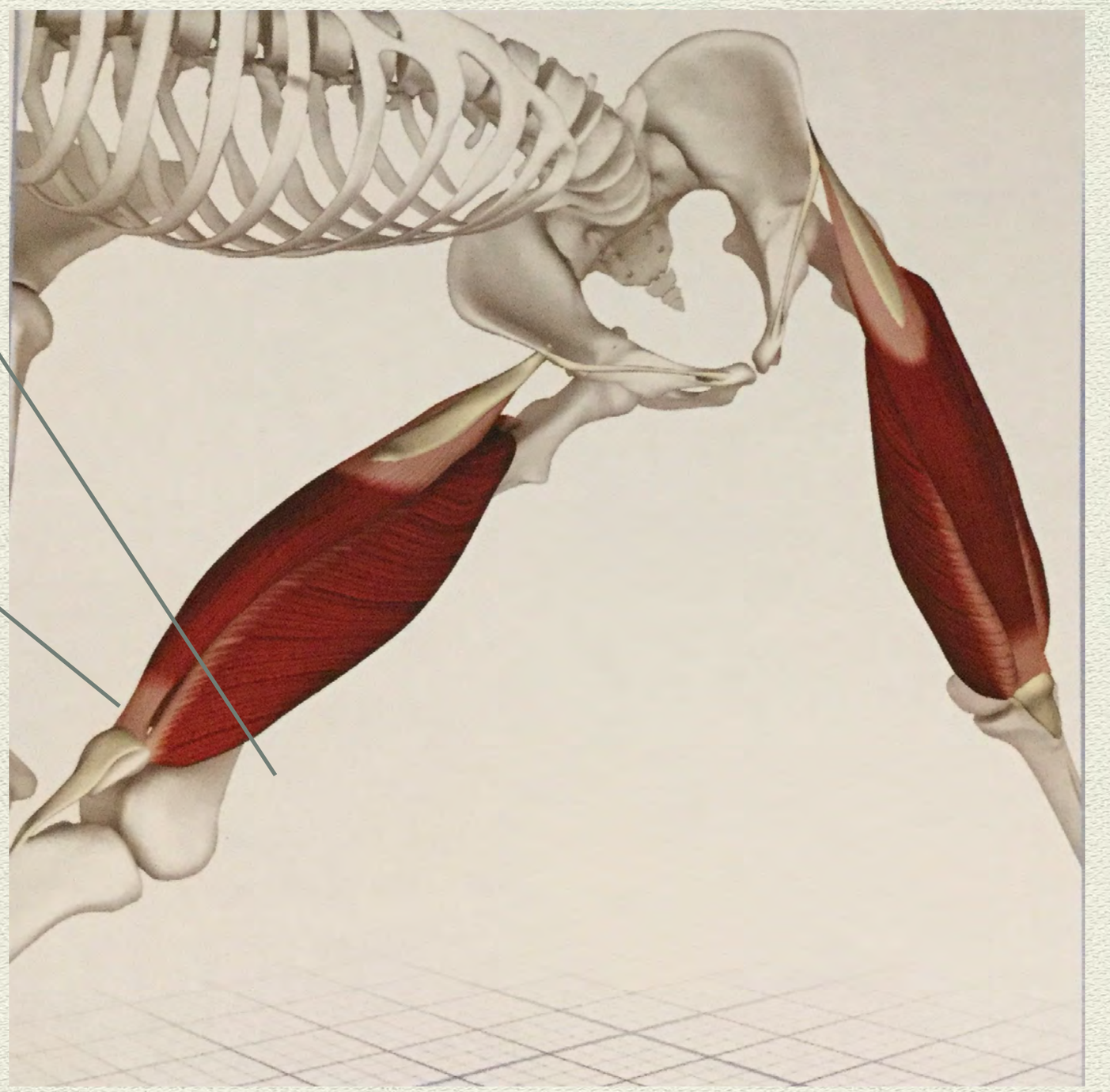


Other components of the quad act solely on the knee joint. They don't cross the hip joint and thus can have no effect on it.

Contraction prevents hyperextension of the knee

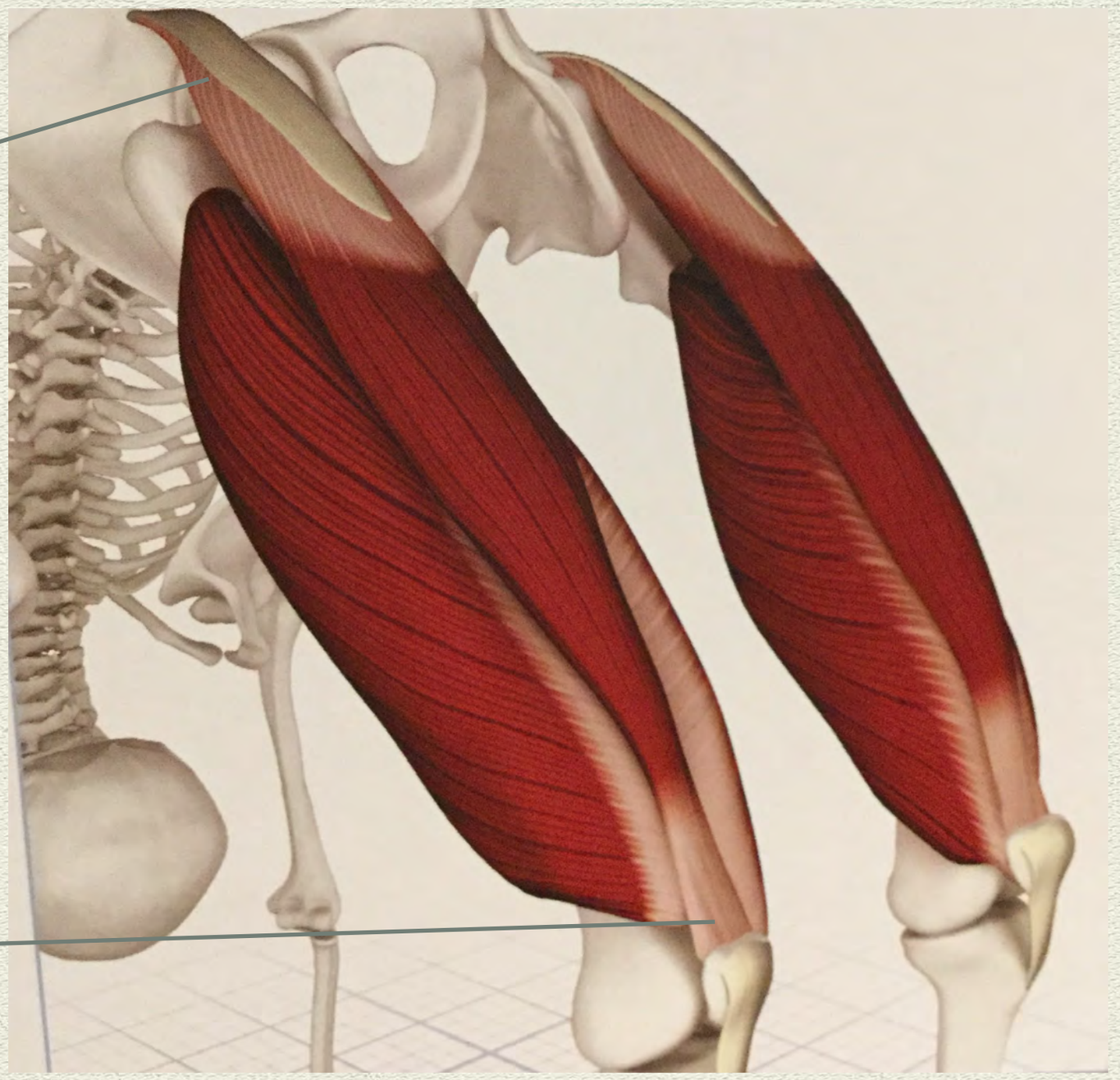
Cue to “pull kneecap upward” engages the quad and stabilizes the joint.

Contraction provides support for the entire body by stabilizing the pelvis



Rectus prevents the hip from collapsing into this back bend

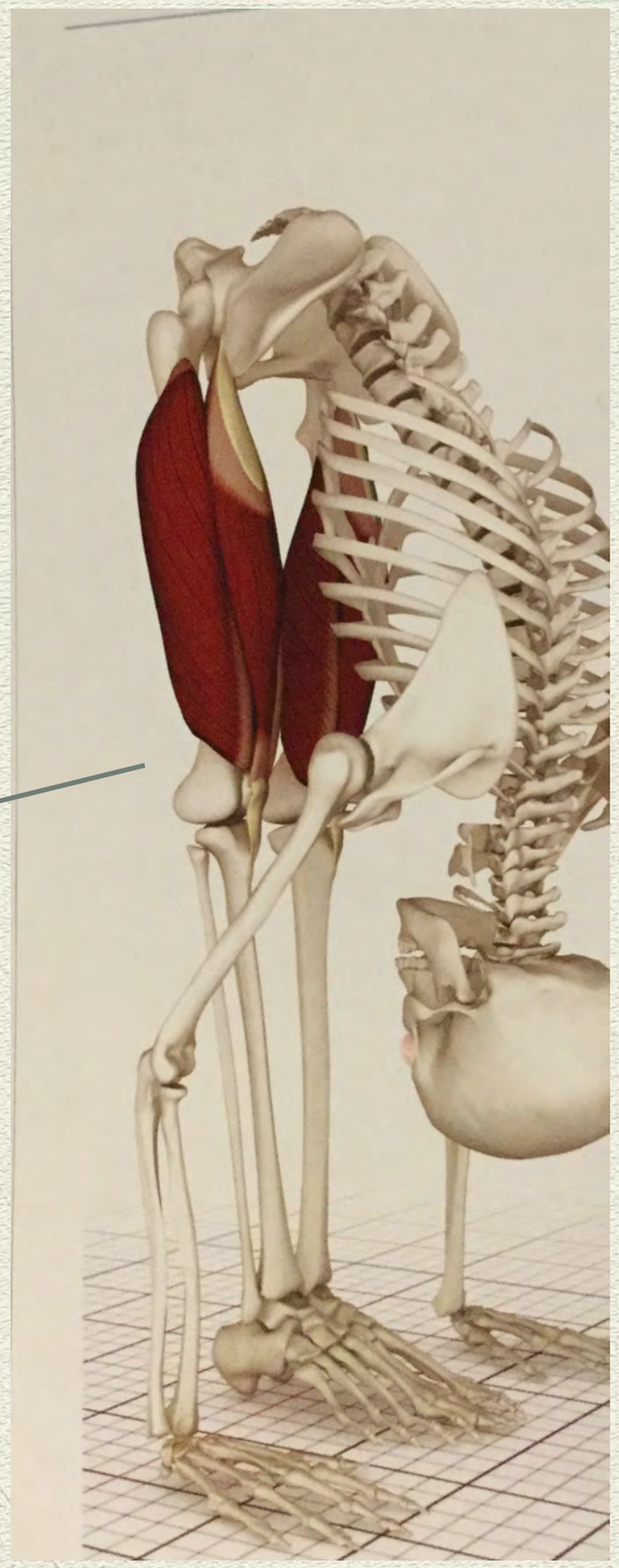
All components of the quad extend the knee and support the lower body. Cue to “push the short edge of the mat away” during wheel activates this muscle.

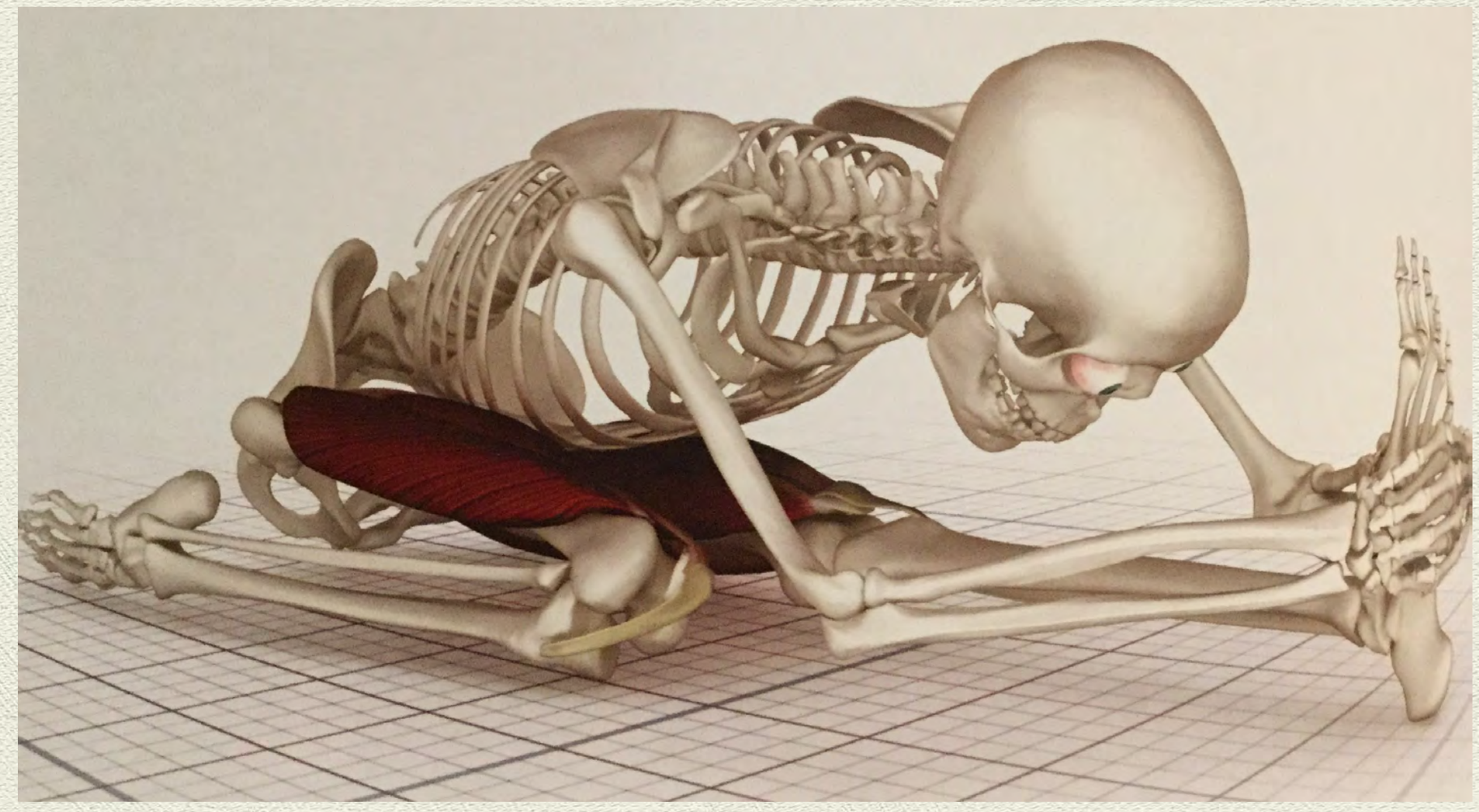


The Quad and Hamstring work in opposition to each other

Contracting the quad in a forward fold lifts the kneecap and straightens the knee. This, in turn stretches the hamstring.

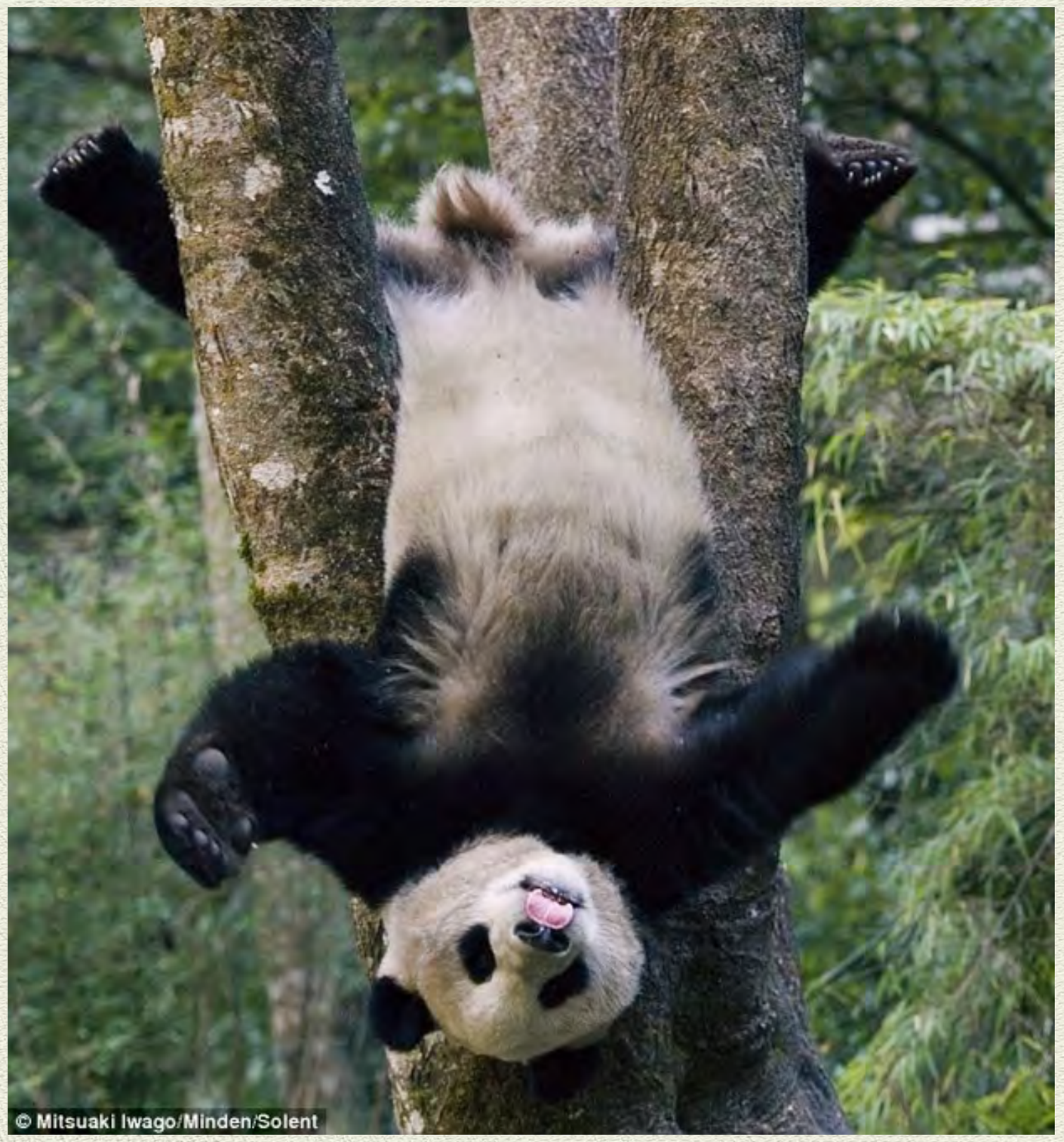
Safe Stretching of the hamstring is promoted with quadriceps contraction.





The left knee is kept straight by contracting the quad. (Which stretches the hamstring)
The right knee being flexed, (by the hamstring) stretches the quad.

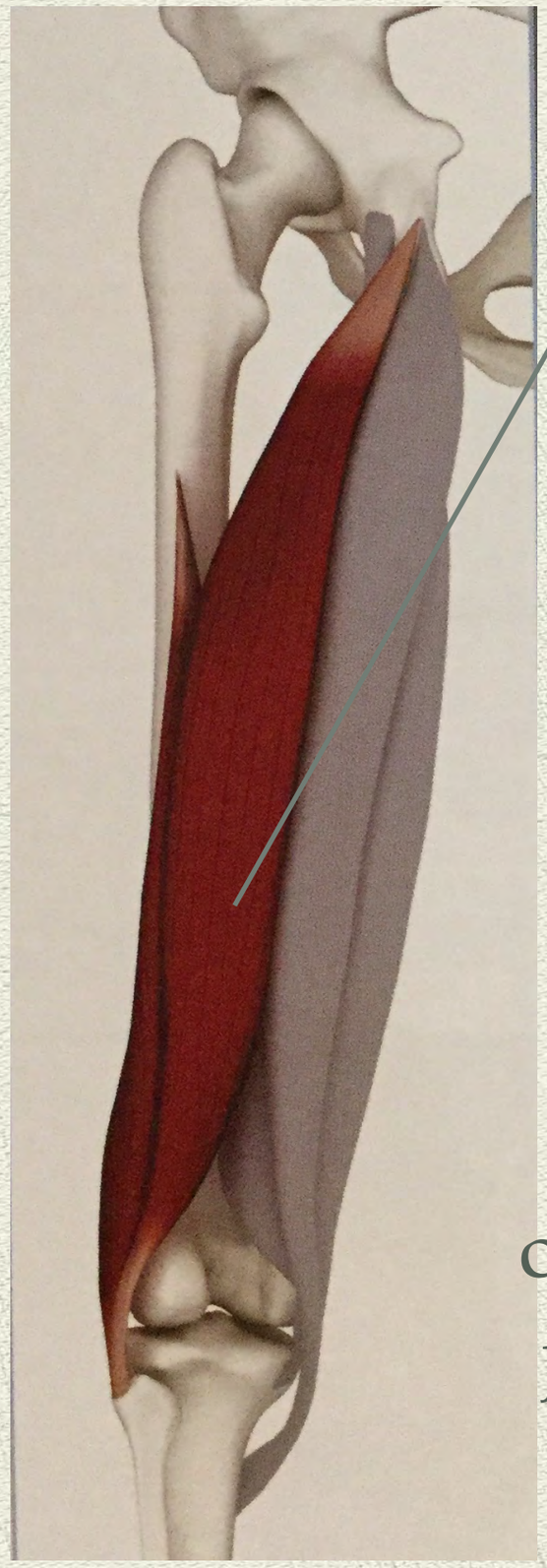
Pretty cool, right?




Let’s flip that thought and explore the hamstring

# The Hamstrings

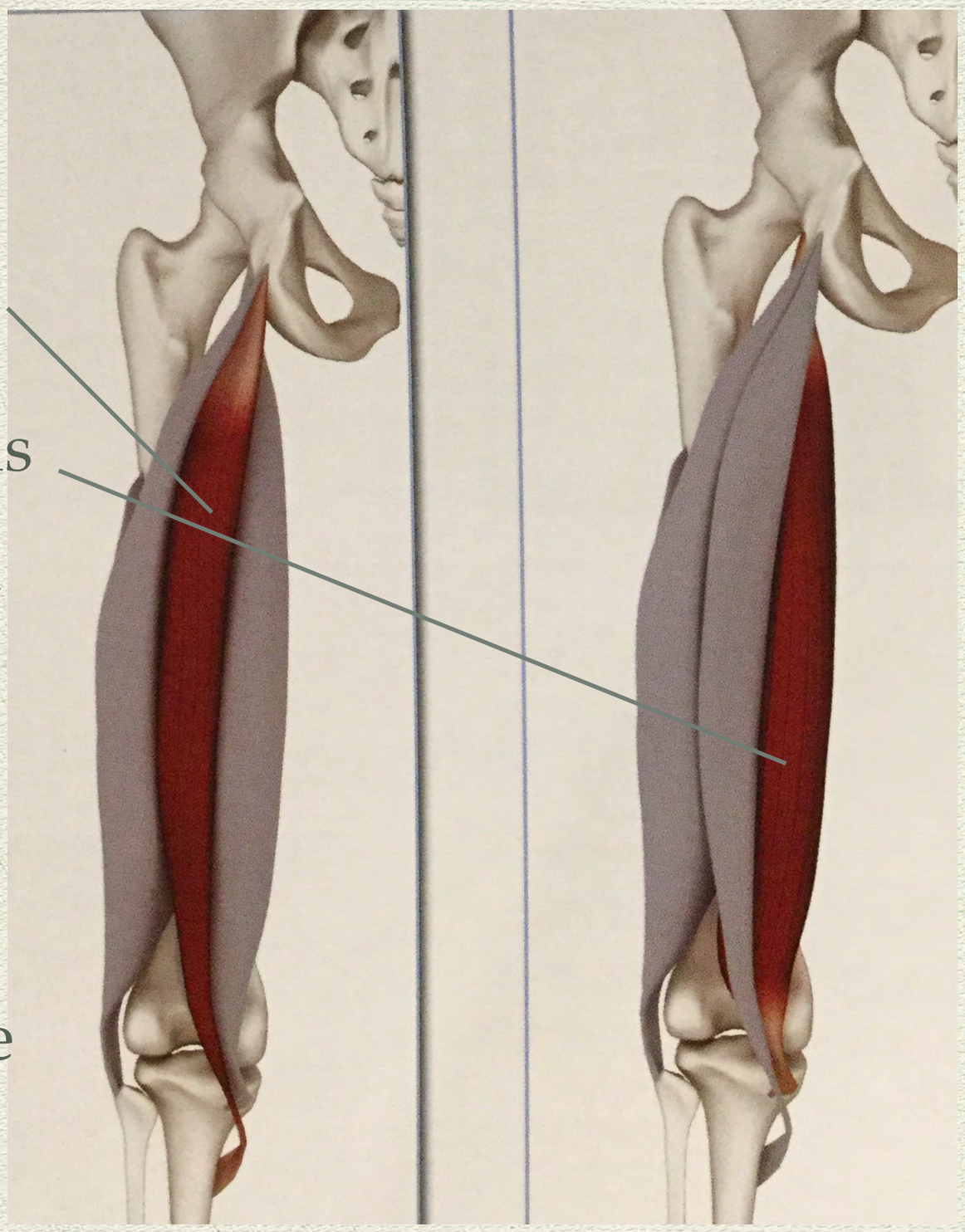
*Aka, the "hammy"*
*Aka "the muscle that is always tight"*
*Aka "the muscle that is frequently pulled"*
*Aka the back of the thigh*



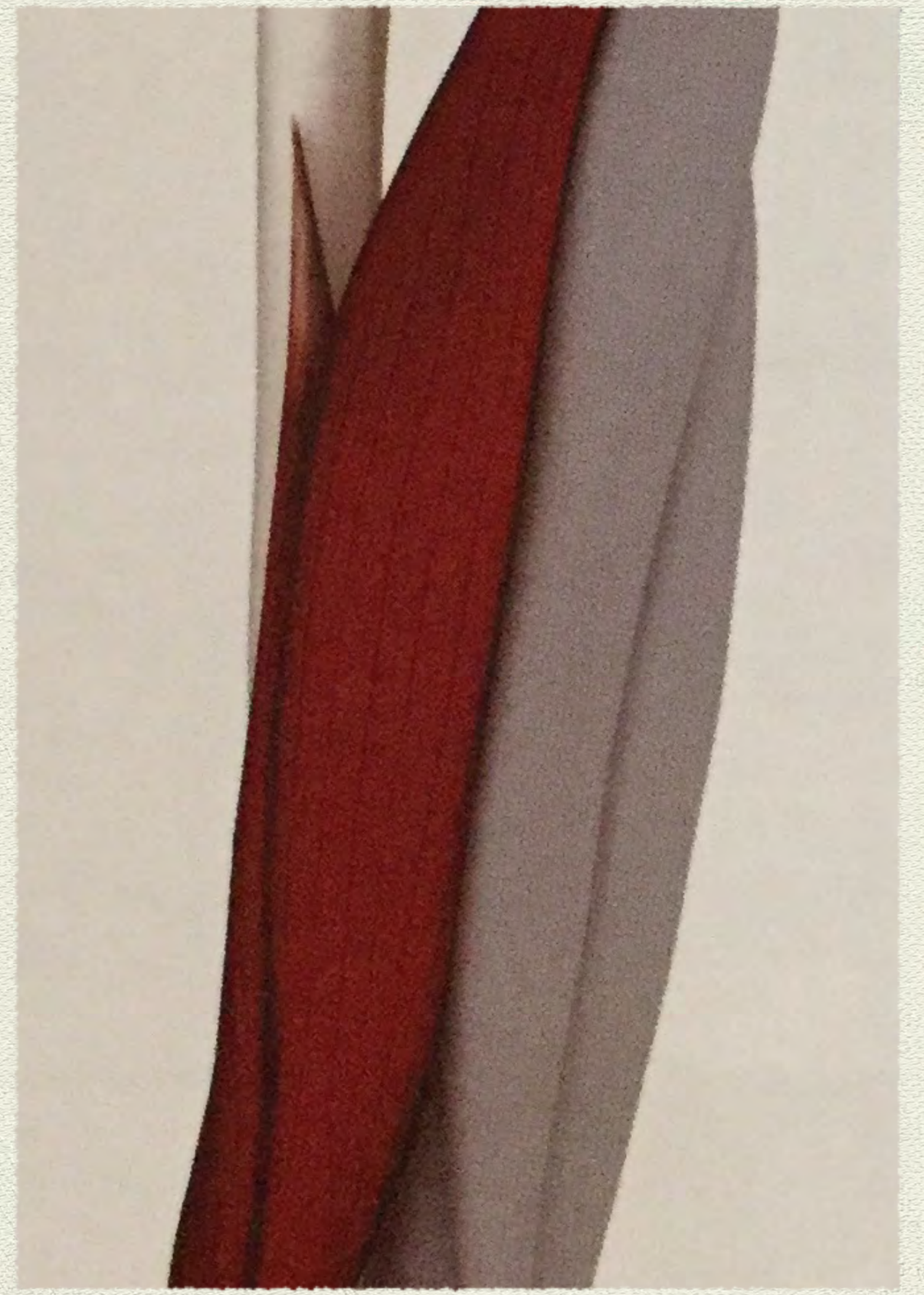
3 district parts:
Biceps femoris
Semitemdinosis
and
semimembranosis

Common origin from the ischial tuberosity aka "sits" bone

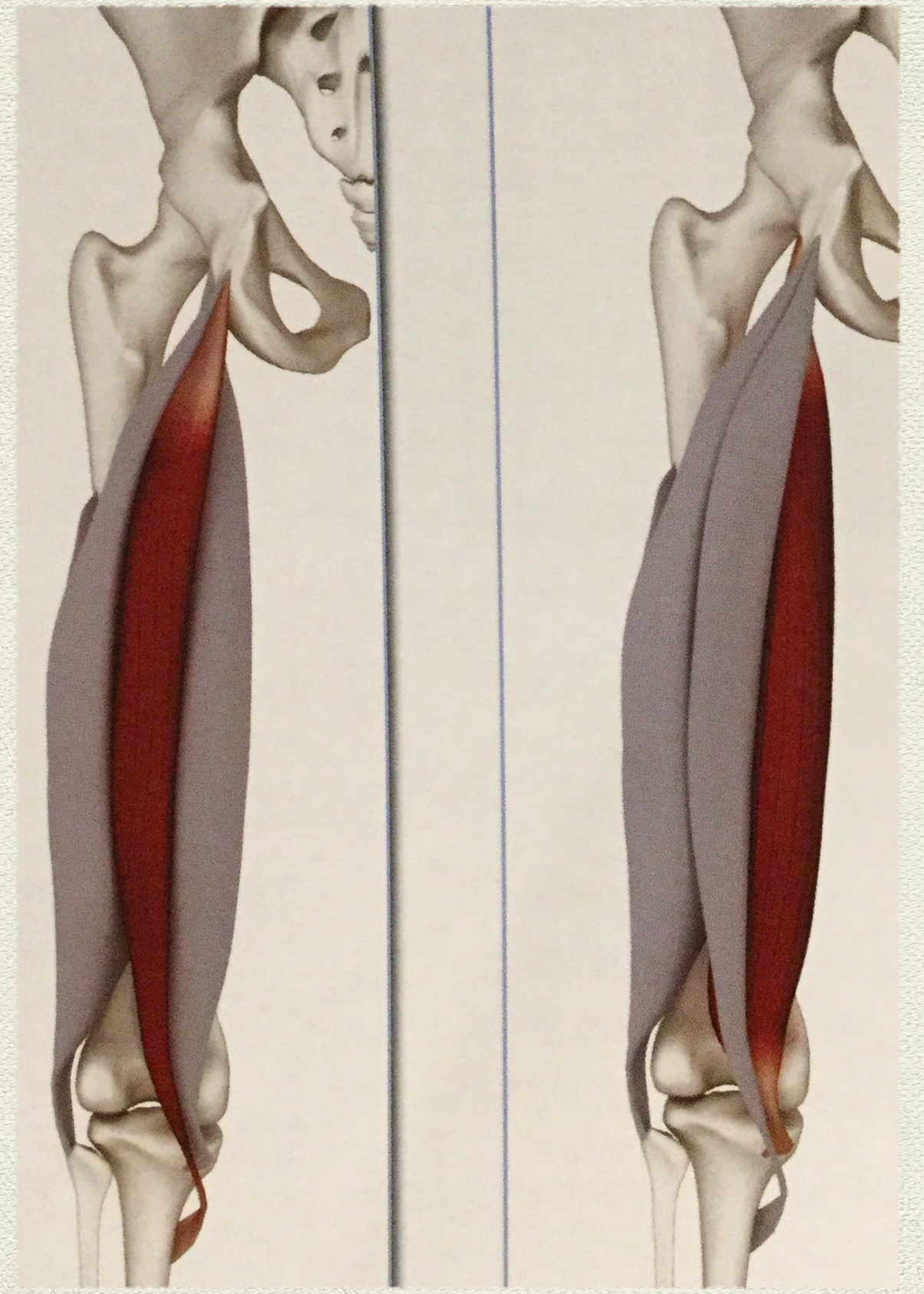
All components cross hip and knee joints, so they act on both joints



*Rectus femoris is the lateral head of the hamstring. It FLEXES. The knee and externally rotate the lower leg when the knee is bent. It shares a common insertion with the IT band and the TFL*

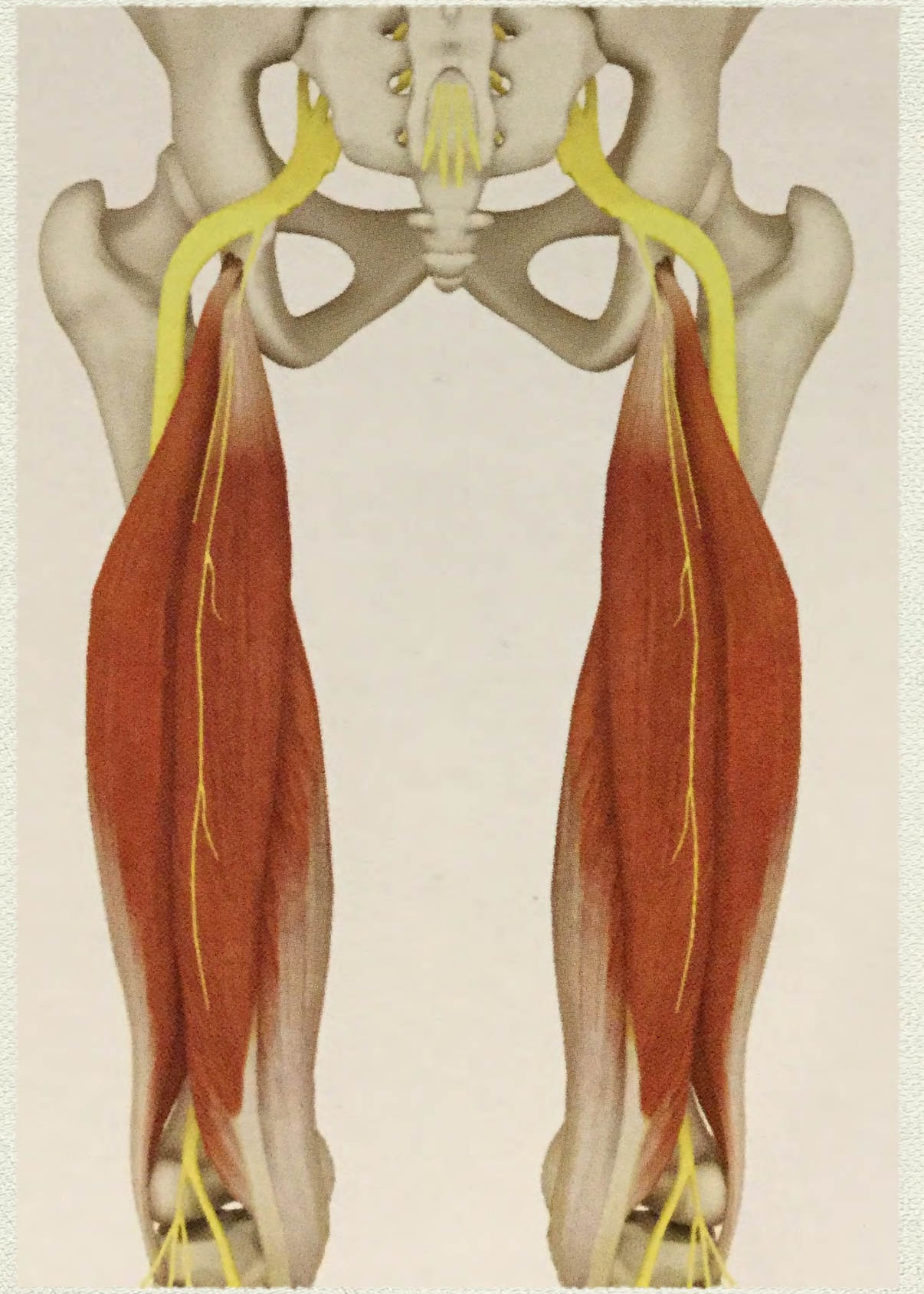


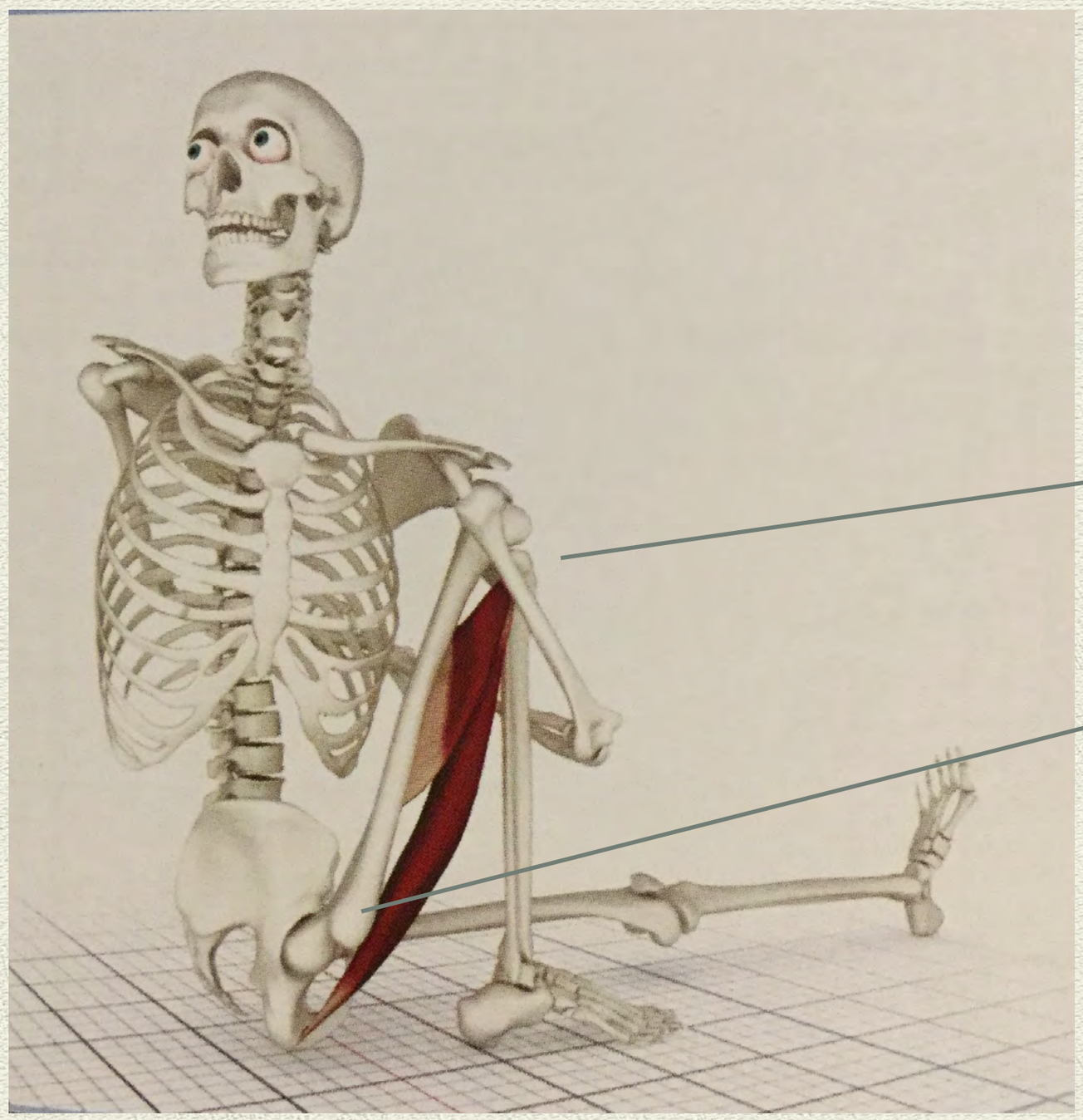
*Semimem. And semiten.*
*Form the inner hamstring.*
*These are the most commonly*
*strained, particularly when*
*the leg goes into uncontrolled*
*"splits"*
*These muscles flex the knee*
*and help the gluteus*
*maximus extend the hip*
*Tightness in these muscles*
*limits forward bending and*
*the ability to straighten the*
*knee while in a forward fold.*



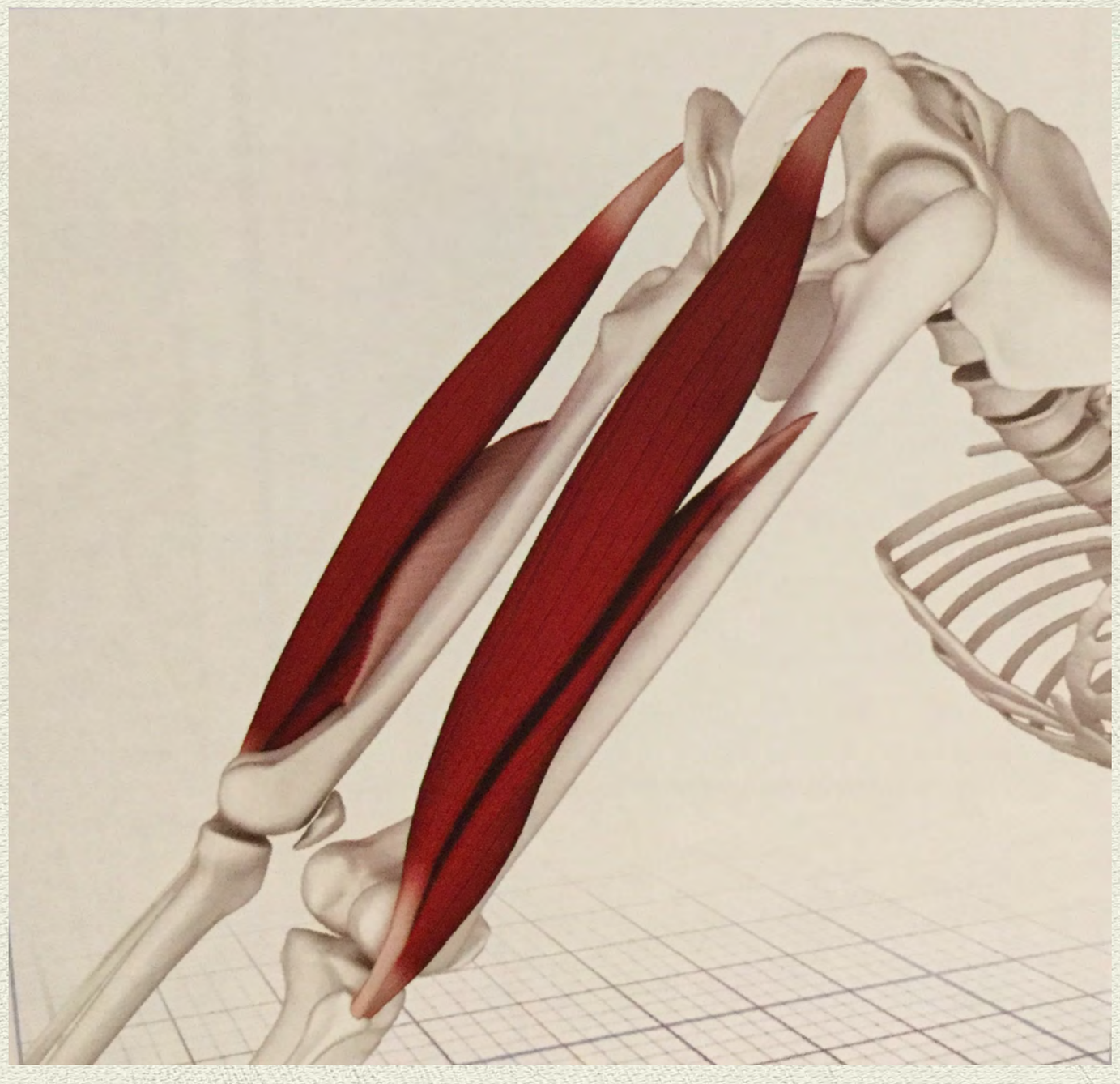
# The Sciatic Nerve

*The largest and longest spinal nerve in the body extending from the low back to the foot. It travels within the "sac" of the hamstring and delivers nerve signals to and from the muscles and skin of the thigh, lower leg and feet. Stretching the hamstring will also stretch the sciatic nerve (not a bad thing...)*

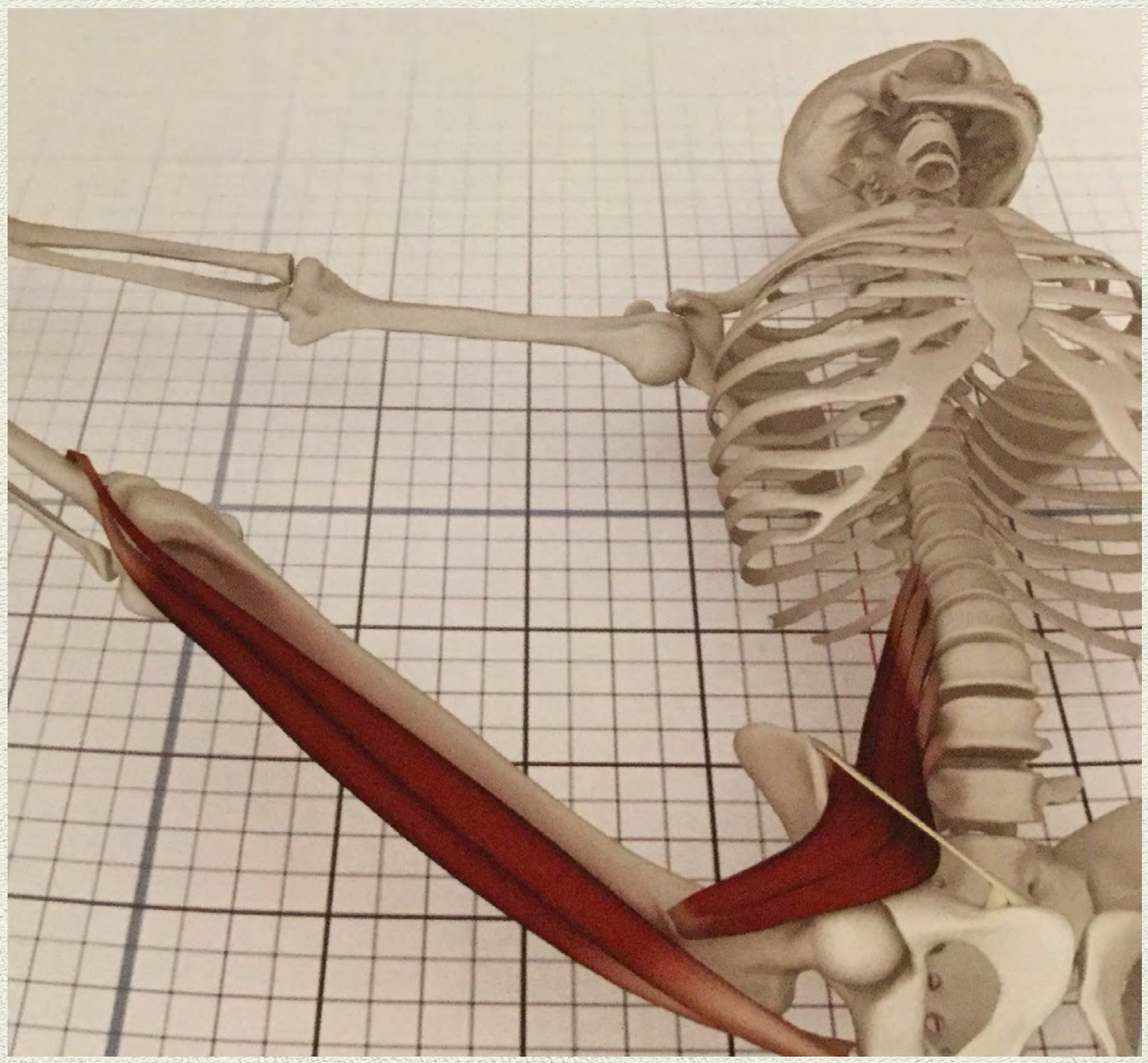




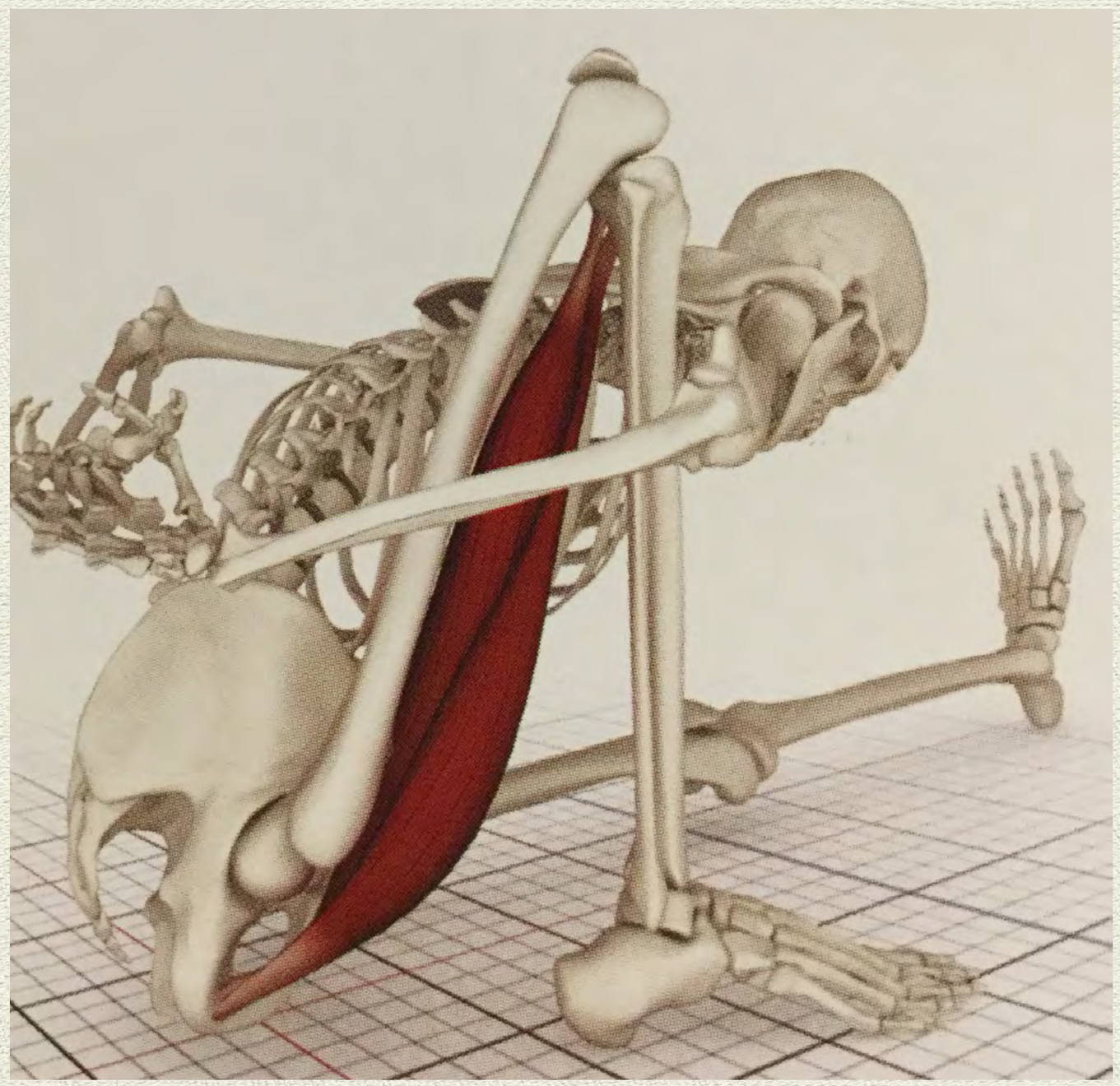
Biceps
femoris flexes
the knee
and
externally
rotates the
hip in a
seated twist



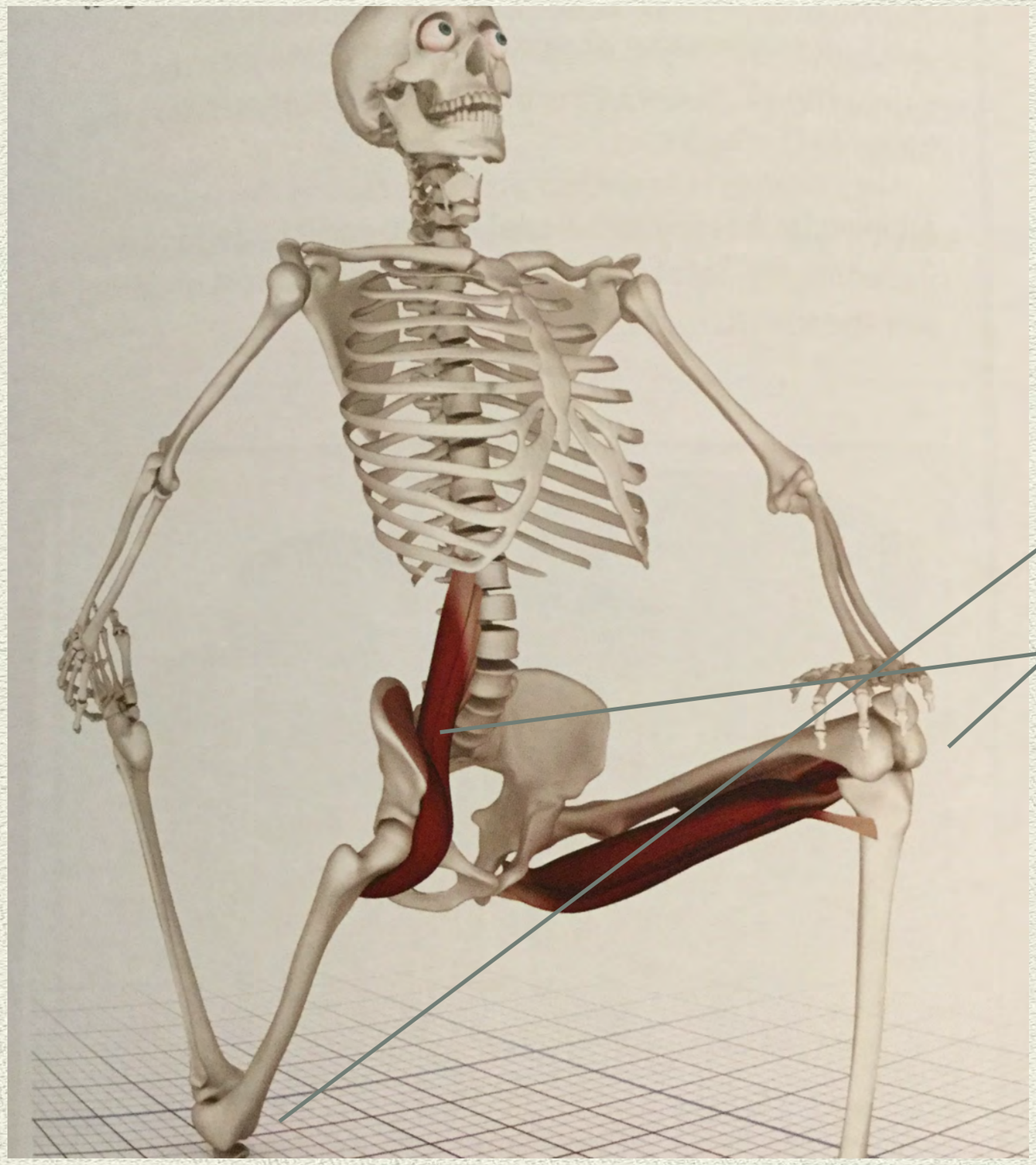
Downward facing dog stretches all components of the hamstring. Contracting the quadriceps will straighten the knee, furthering the stretch effect on the hamstring.



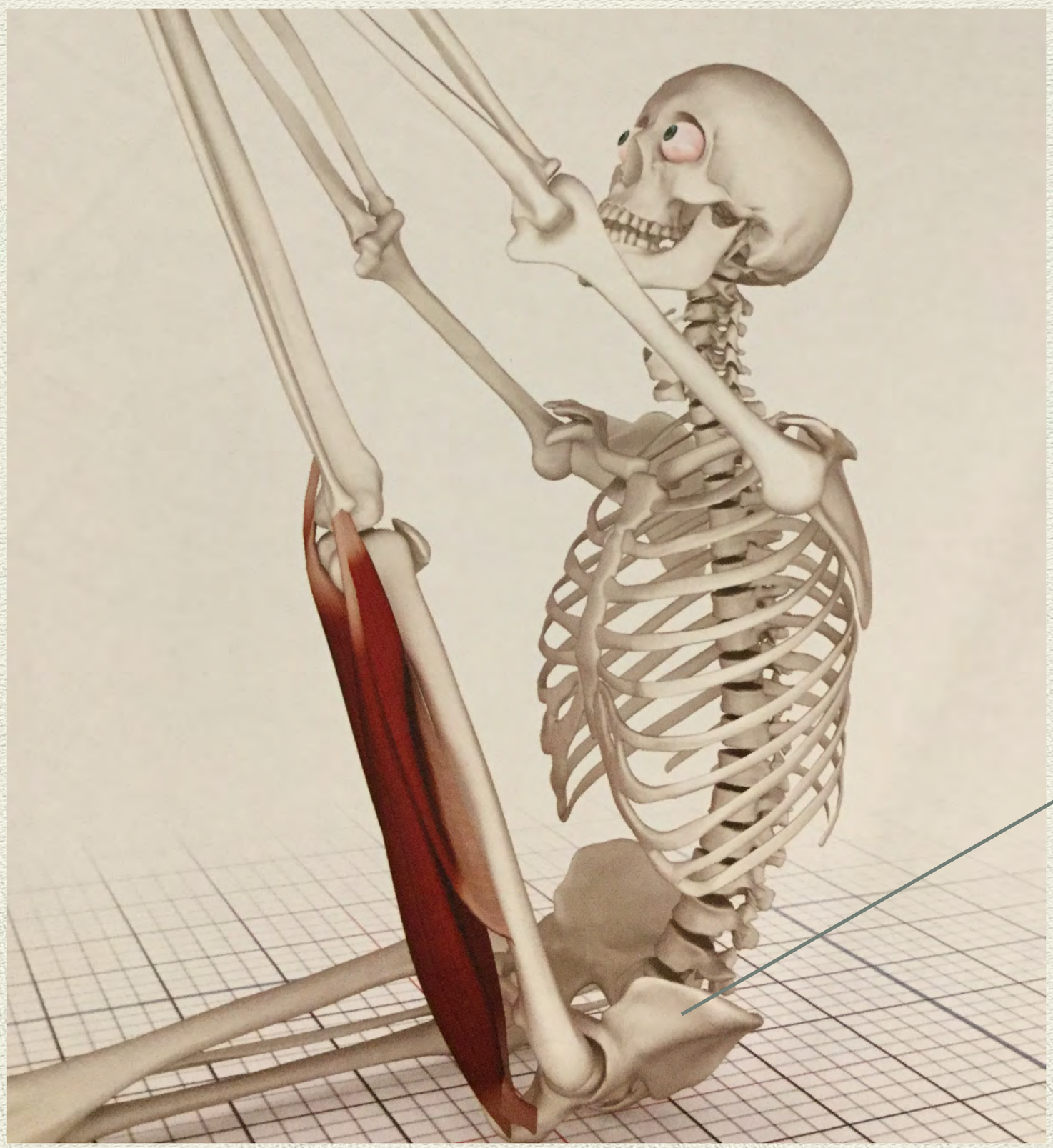
The medial hamstring is stretched in this pose. What does the iliopsoas do here? What about the quad?



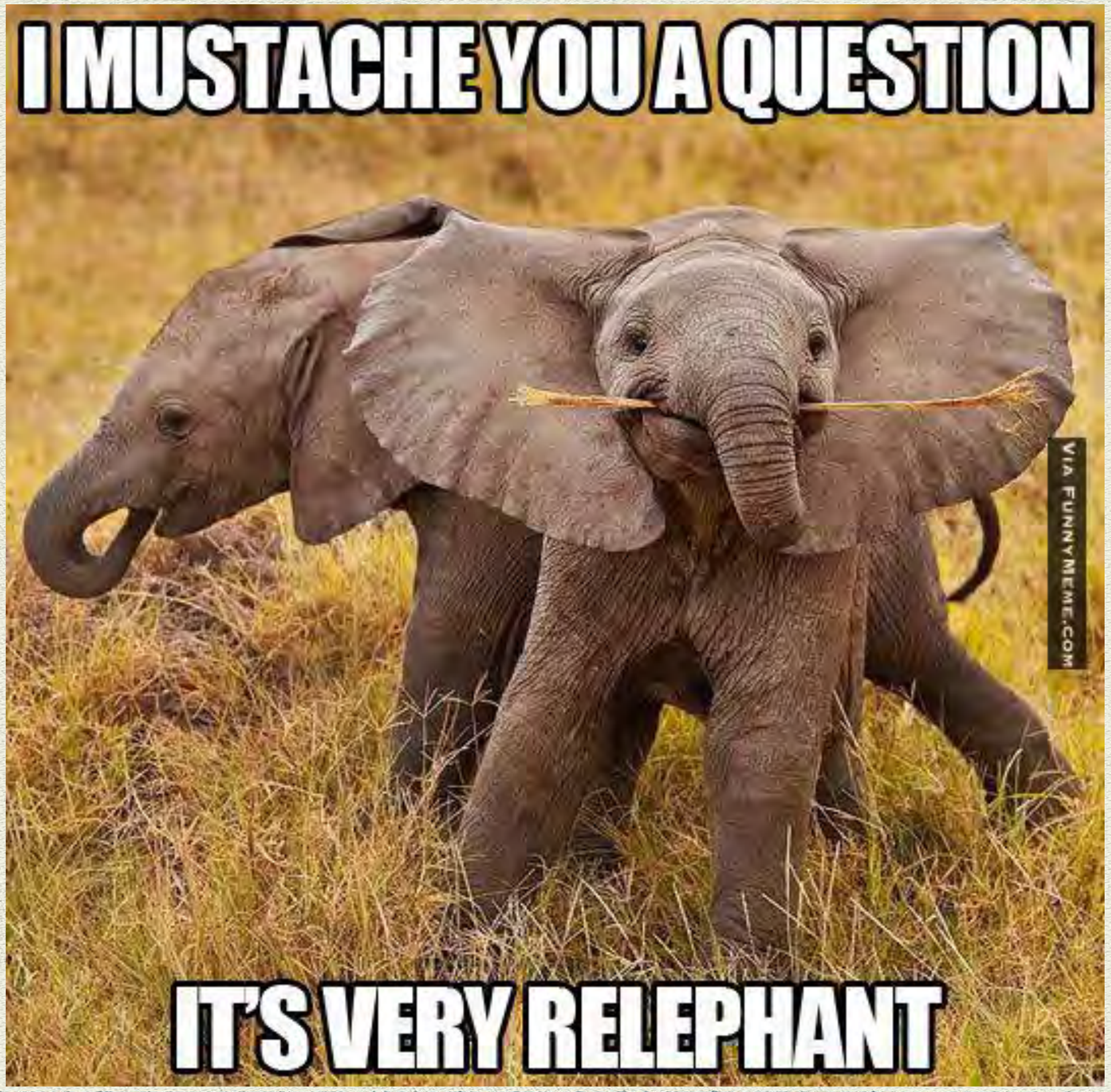
The semimembranosis and semitendinosis are active here flexing the knee and pulling the knee inward.  Weakness in this part of the hamstring can make it difficult to keep the knee moving toward the midline. This is a great way to strengthen the inner hamstring.



In lunging postures, the hamstrings FLEX the knees
And also stretch the hip flexors.
Which other hip flexor would be stretched here?



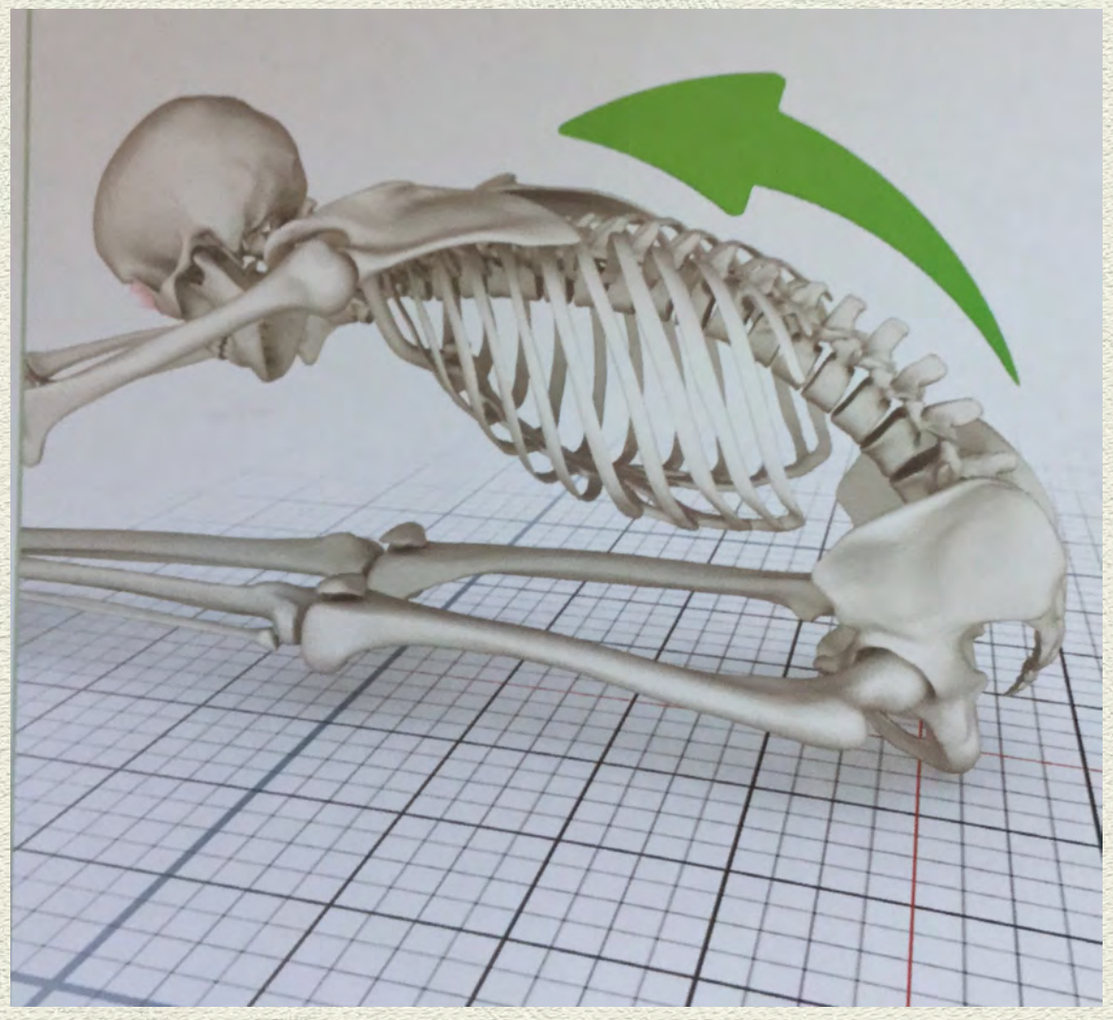
As with downward facing dog, this posture stretches all components of the hamstring. What could you do at the pelvis to advance the lengthening of the hamstring?


I MUSTACHE YOU A QUESTION
VIA FUNNYMEME.COM
IT'S VERY RELEPHANT

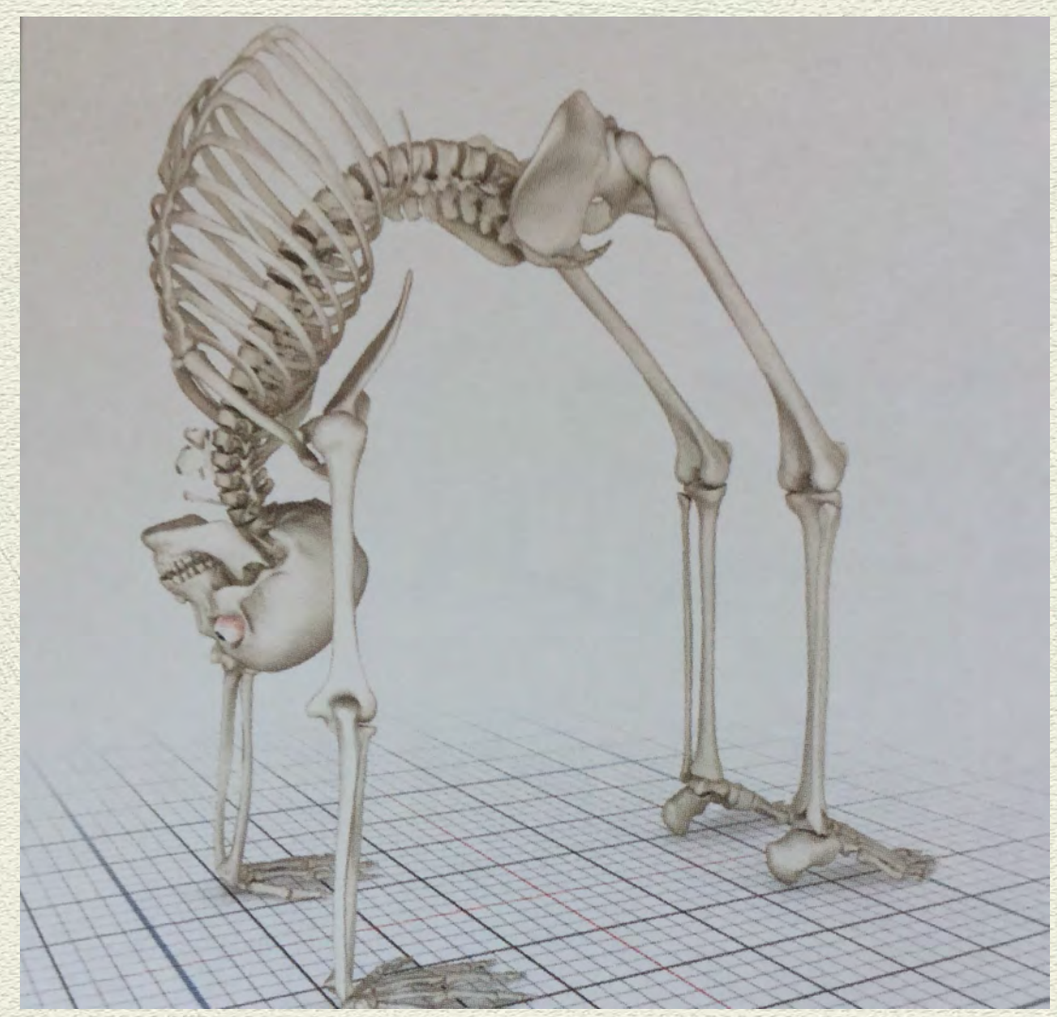
# The Top Half

*Upper extremity and Trunk*

# Motions of the spine



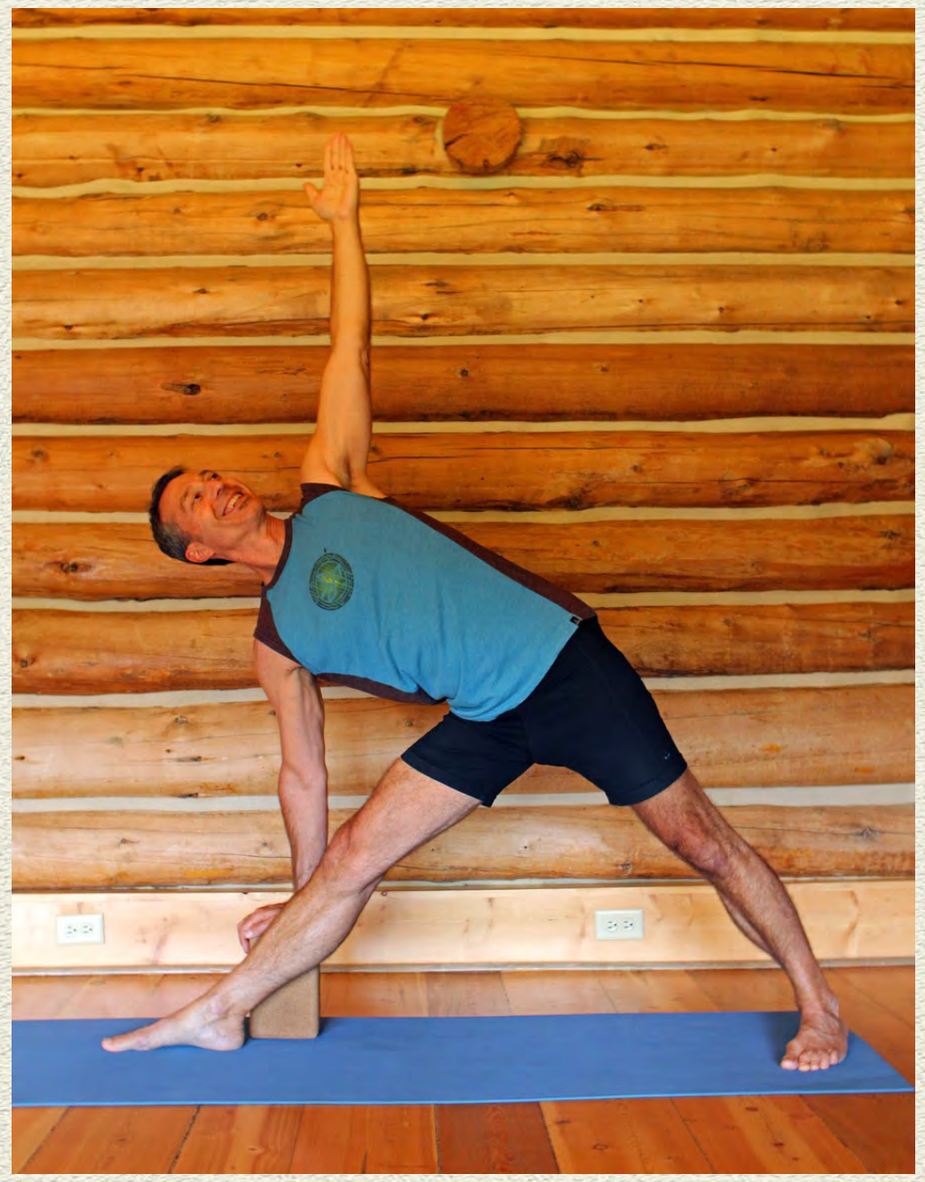
Flexion



Extension

# Rotation

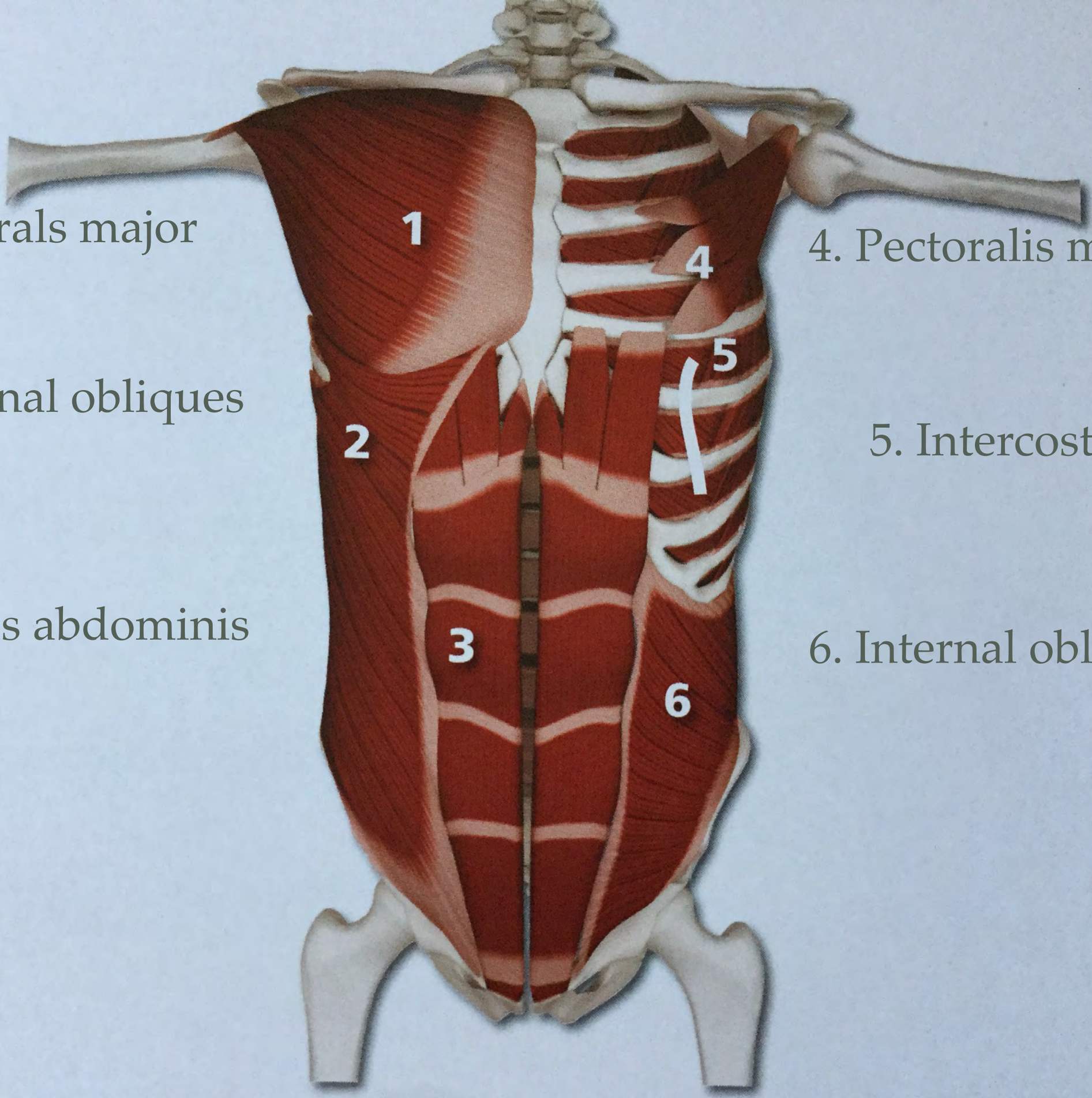
# Lateral bending  aka side bending



1.Pectorals major

2. External obliques

3.Rectus abdominis



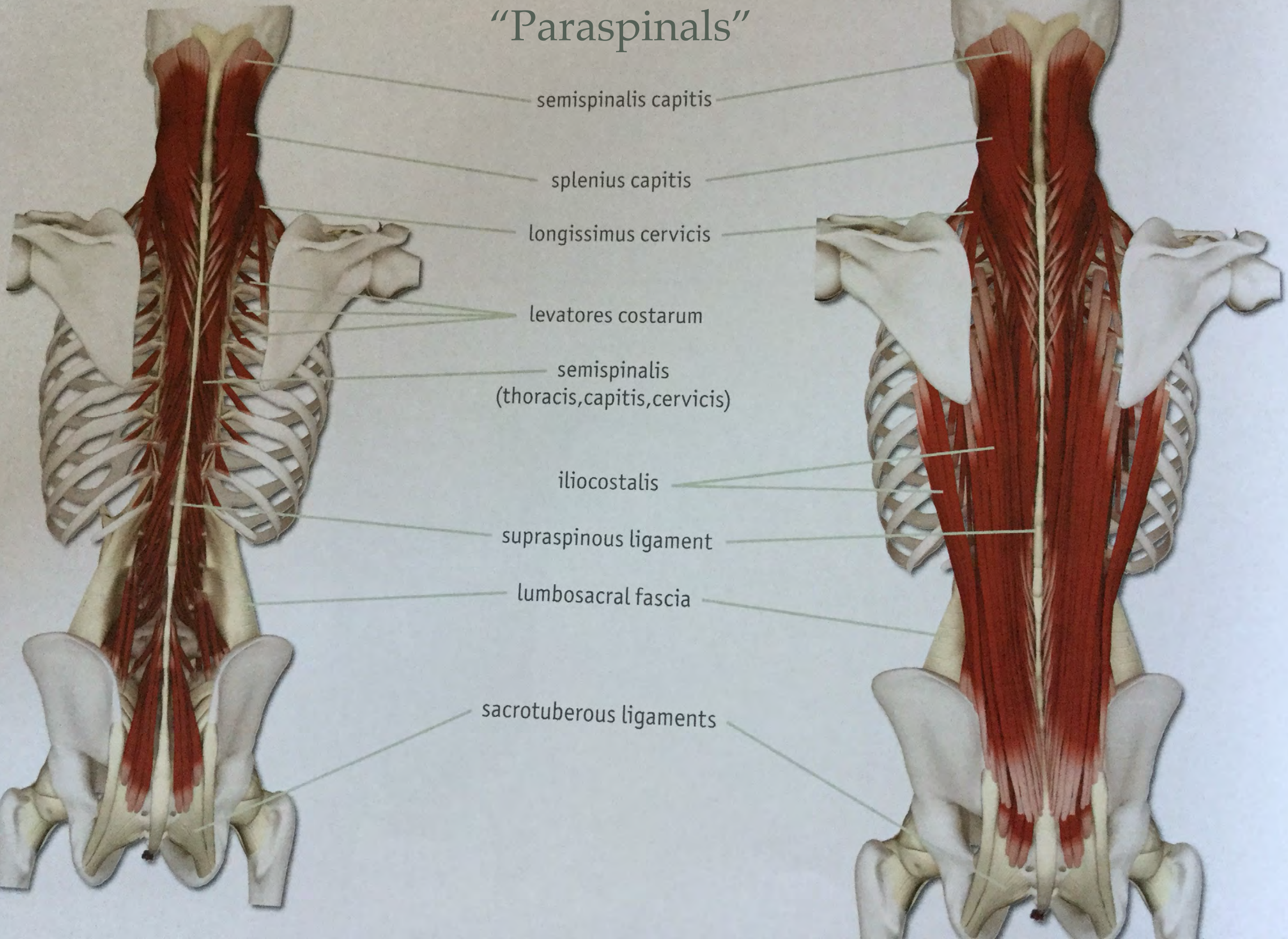

4. Pectoralis minor

5. Intercostal

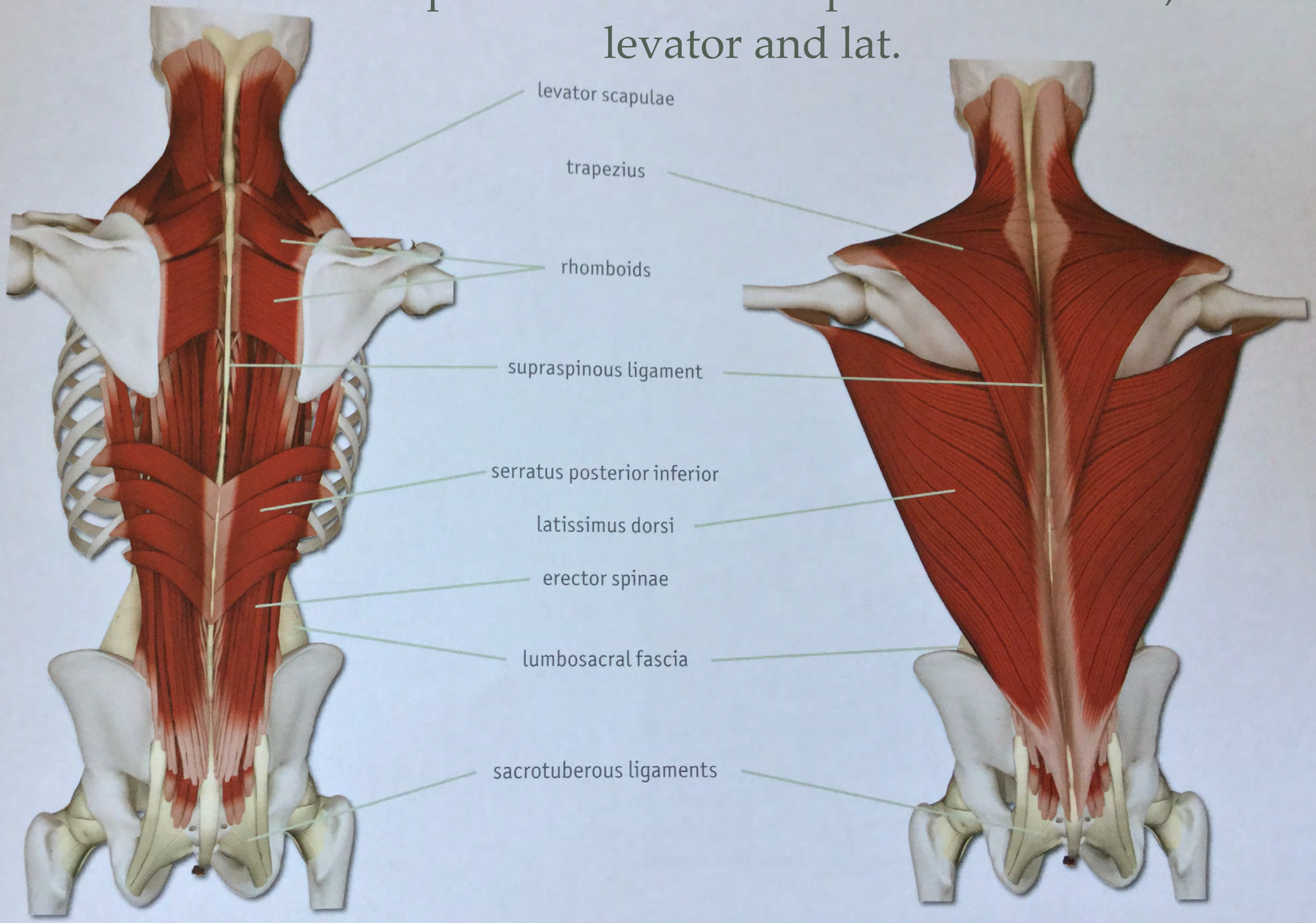
6. Internal obliques

*Left to right* illustrates the muscles of the back, from deep to superficial

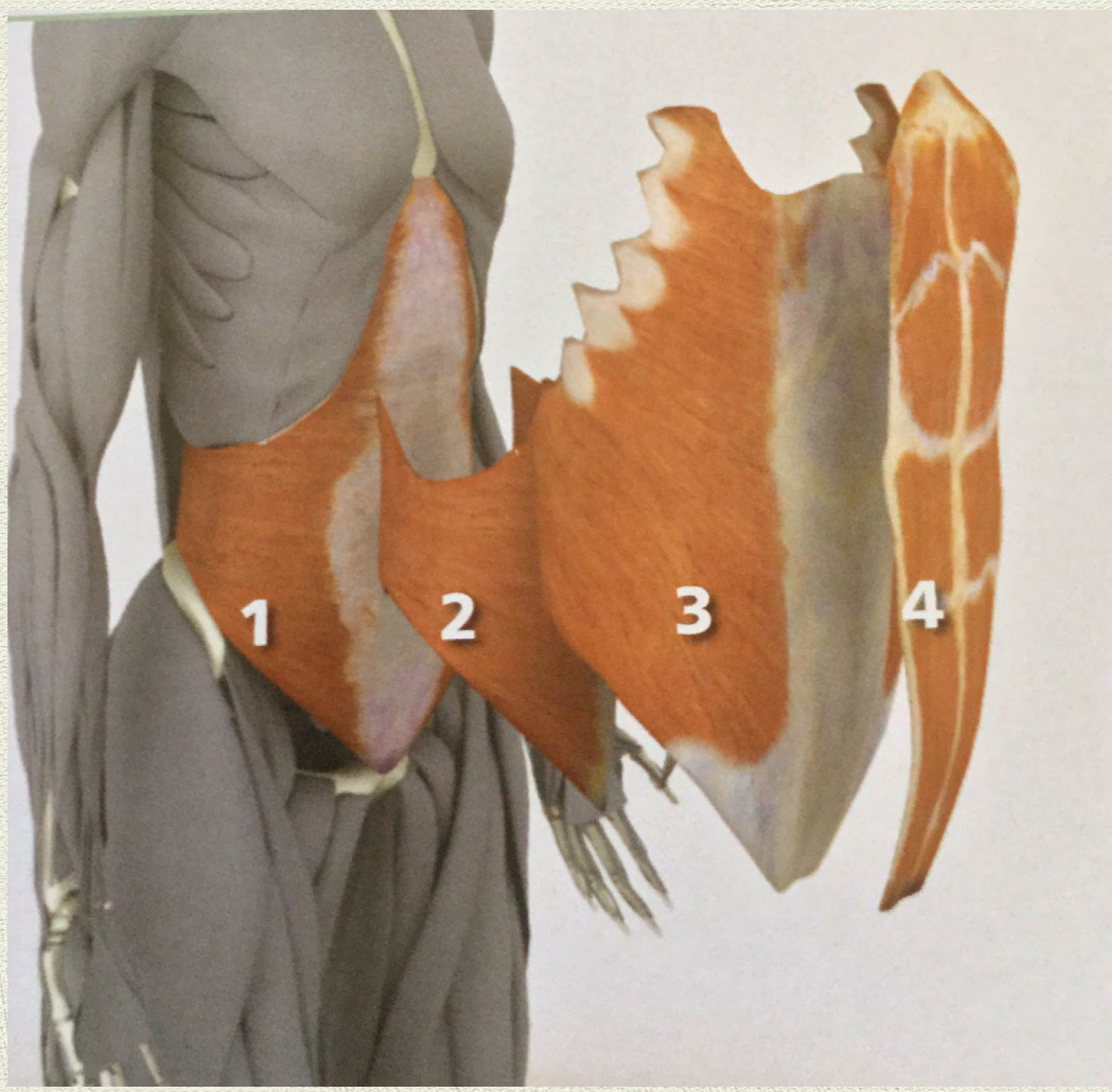
# "Paraspinals"



# Compare the fibers of traps and rhomboid, levator and lat.



# The Abdominals




Superficial to deep

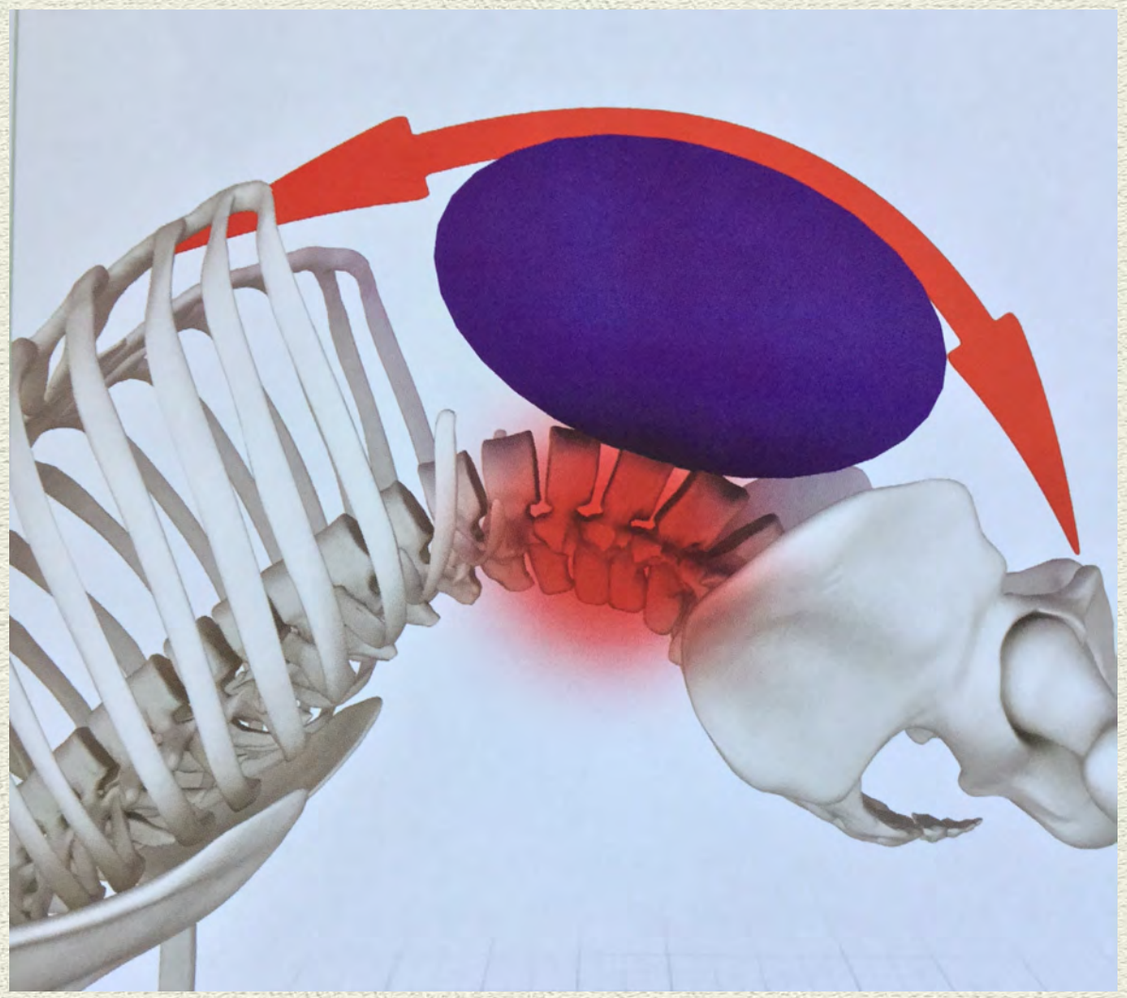
1. Transversal abdominis
2. Internal obliques
3. External obliques
4. Rectus abdominis

Flex, rotate and side bend the trunk

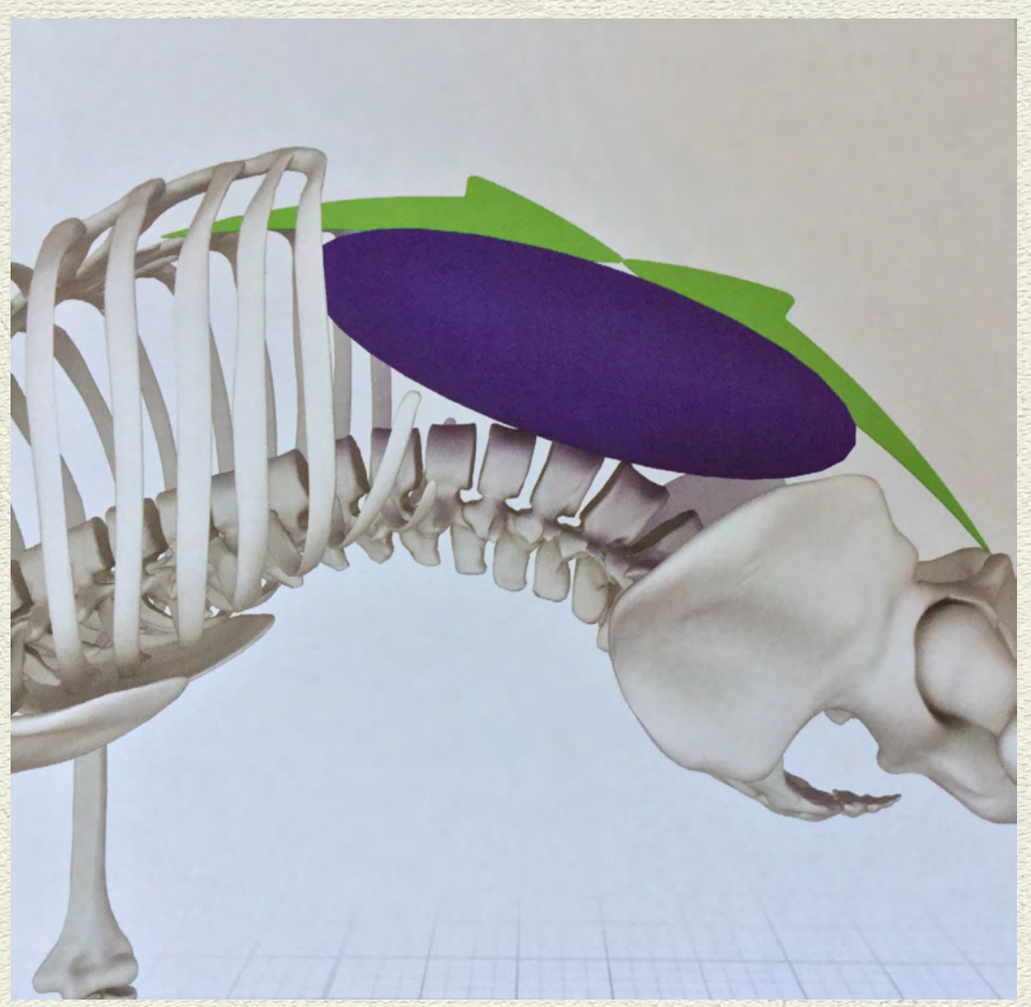
Compress the organs, create the “airbag effect”

UDYANA Bandha contracts these muscles

# “Airbag effect”

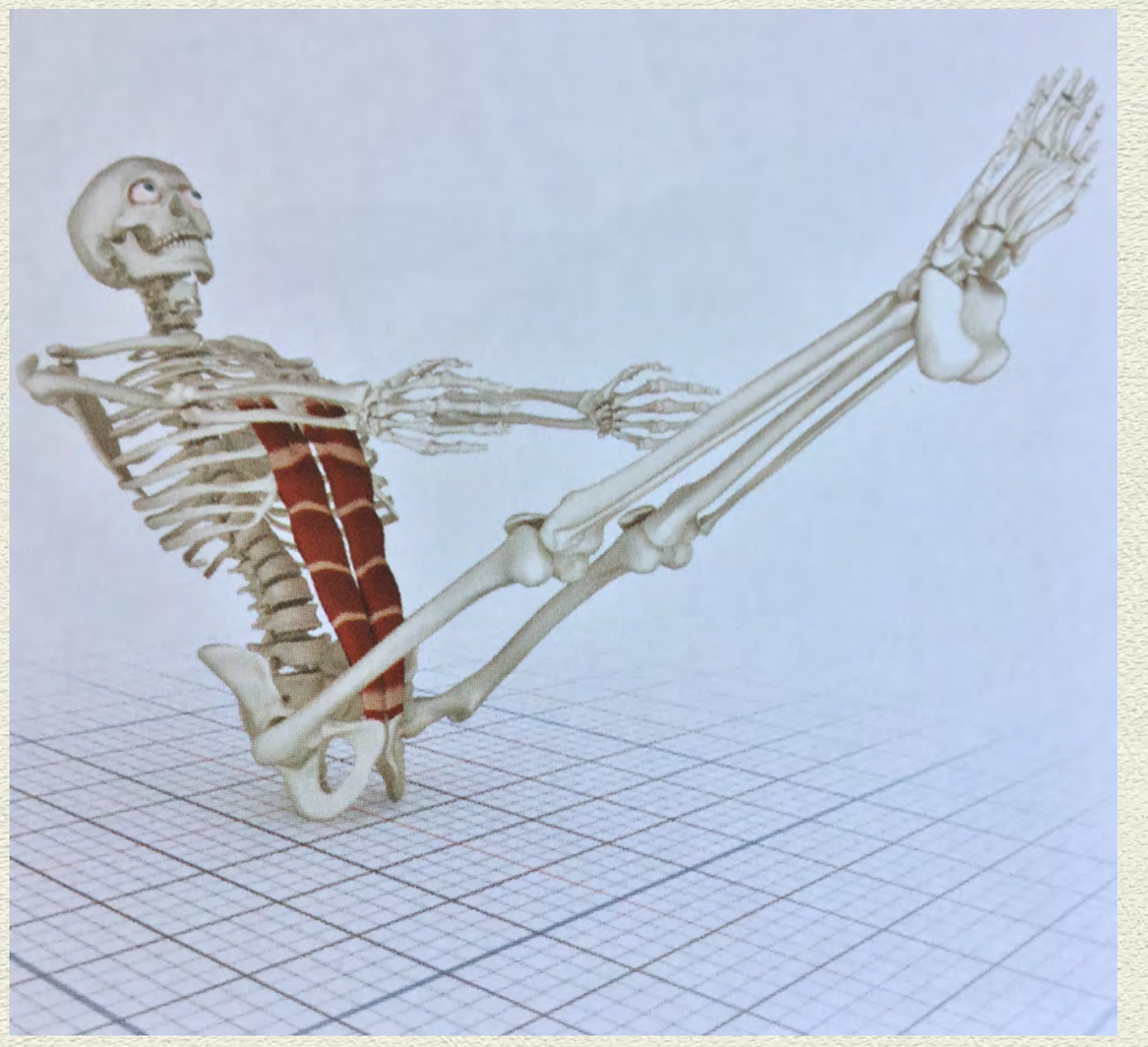


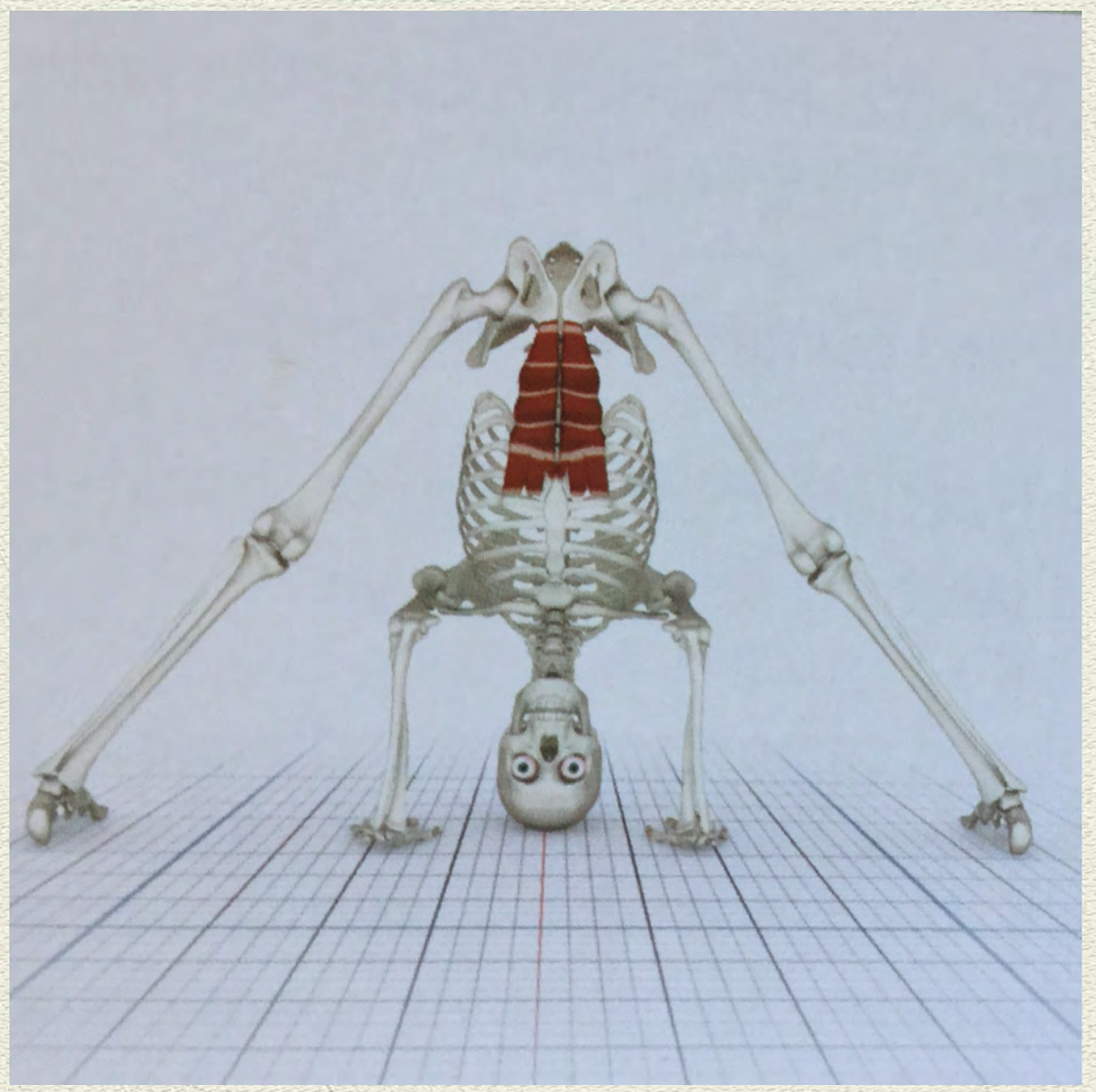
No abdominal support

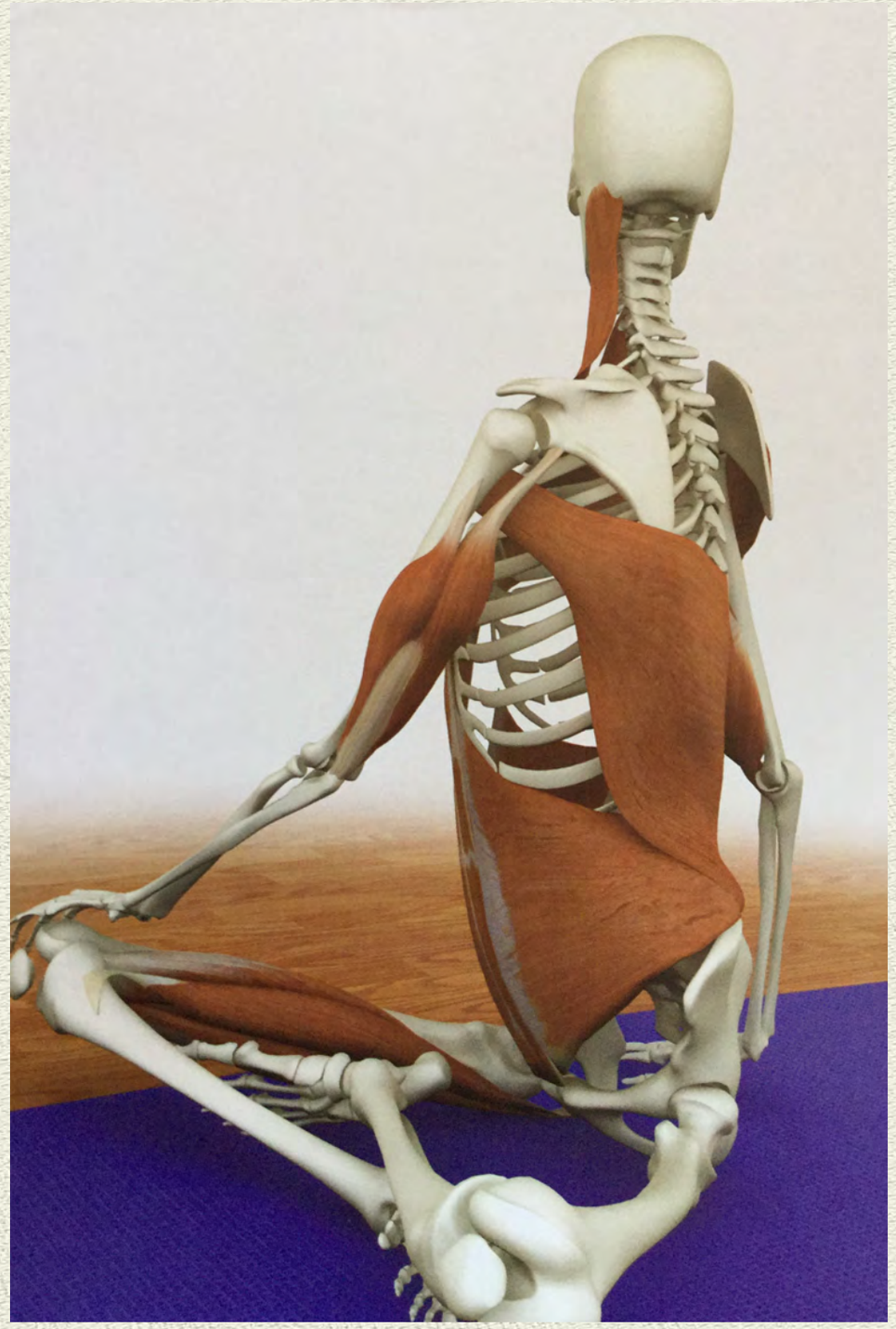


Abdominals engaged

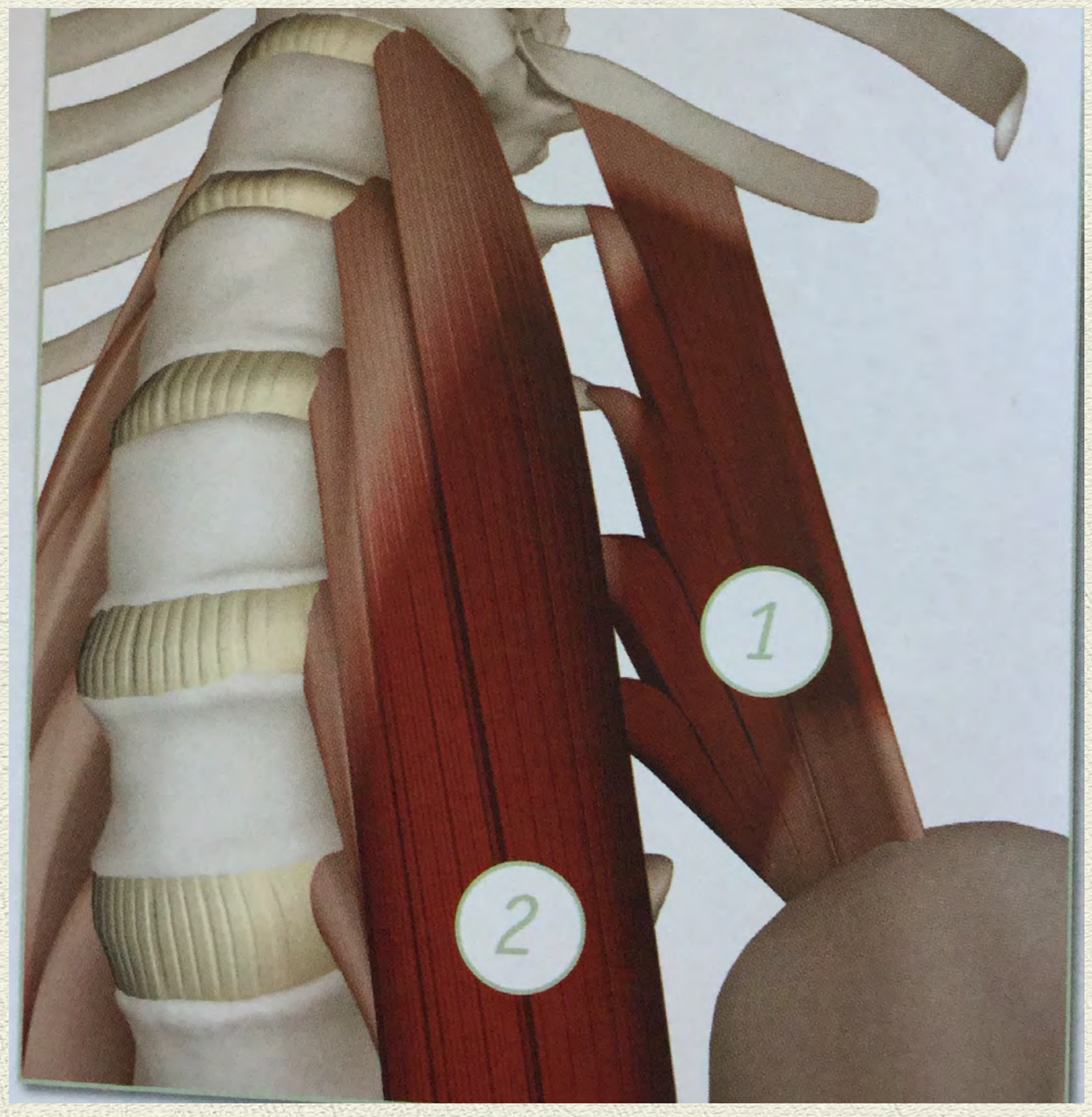
# Trunk flexion







Internal and external
obliques create rotation
of the spine,
dissociating the
shoulders from the hips

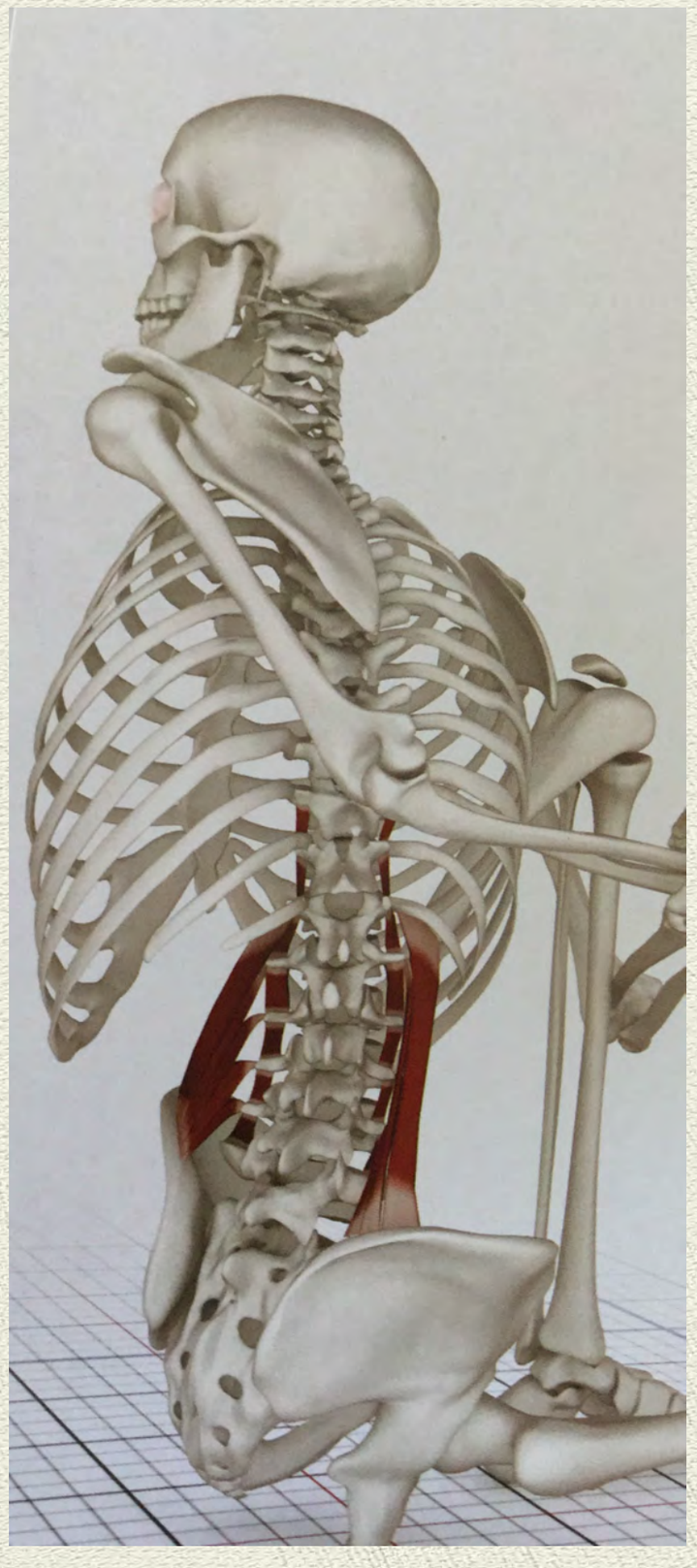



# Muscles of the BACK

1.Quadratus Lumborum
2. Psoas major

THAT'S RIGHT! PSOAS IS A HIP AND A BACK MUSCLE!

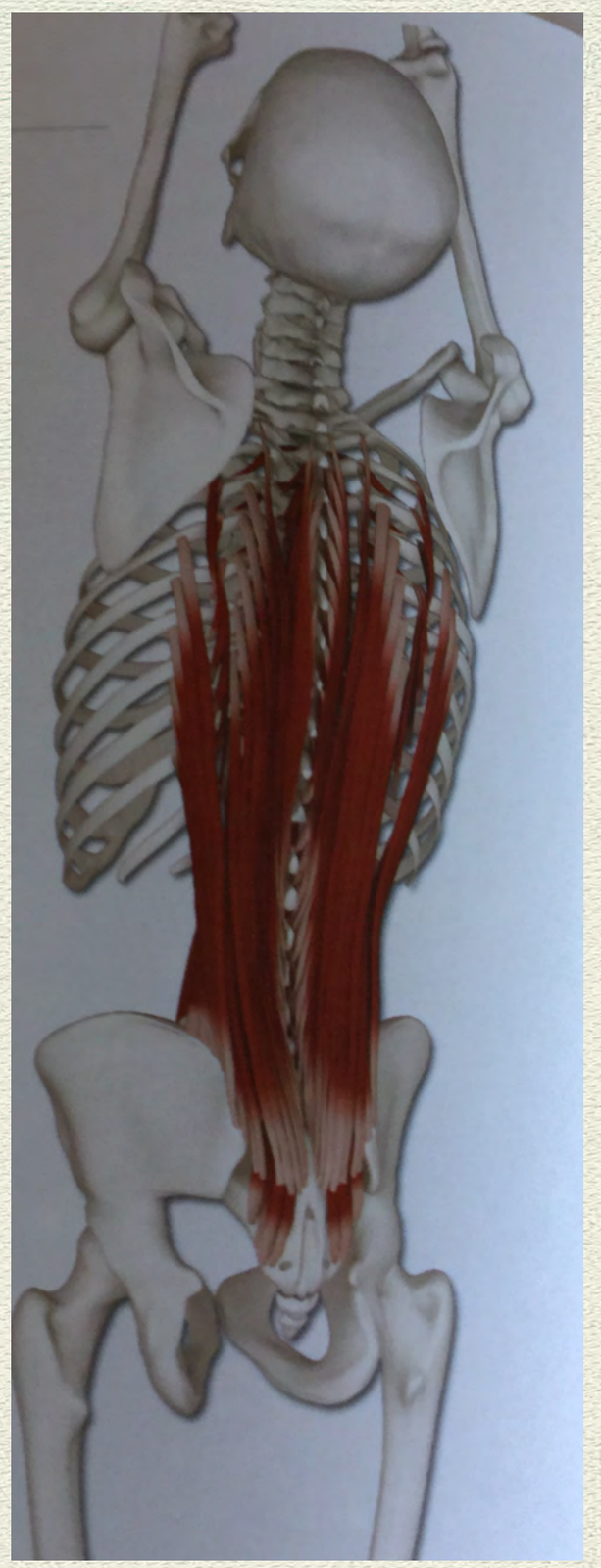

WAIT...
WHAT?
quickmeme.com



Back muscles function to extend and laterally bend and  rotate the spine.

They work in opposition to the abdominals

The abdominals and the back muscles combine to form the “core”



# SHOULDER GIRDLE

*Anterior and Posterior*

*The "roots" of our arm and hand, thus the root of our function*

# Shoulder Girdle

*Our shoulder girdle is more MOBILE than STABLE*

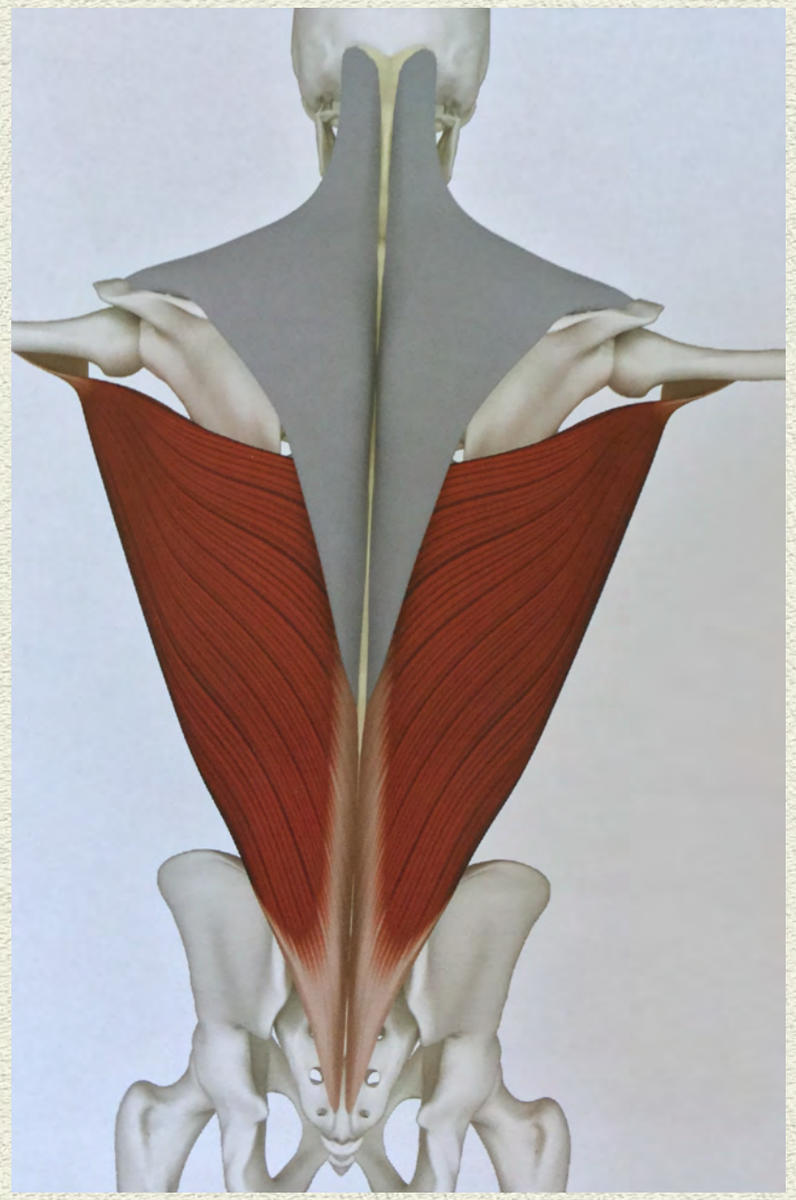
Weight bearing through the shoulder girdle is a big component of yoga, therefore, promoting STABILITY is key

# Posterior Shoulder Girdle

*The Back Body and the Rotator Cuff*

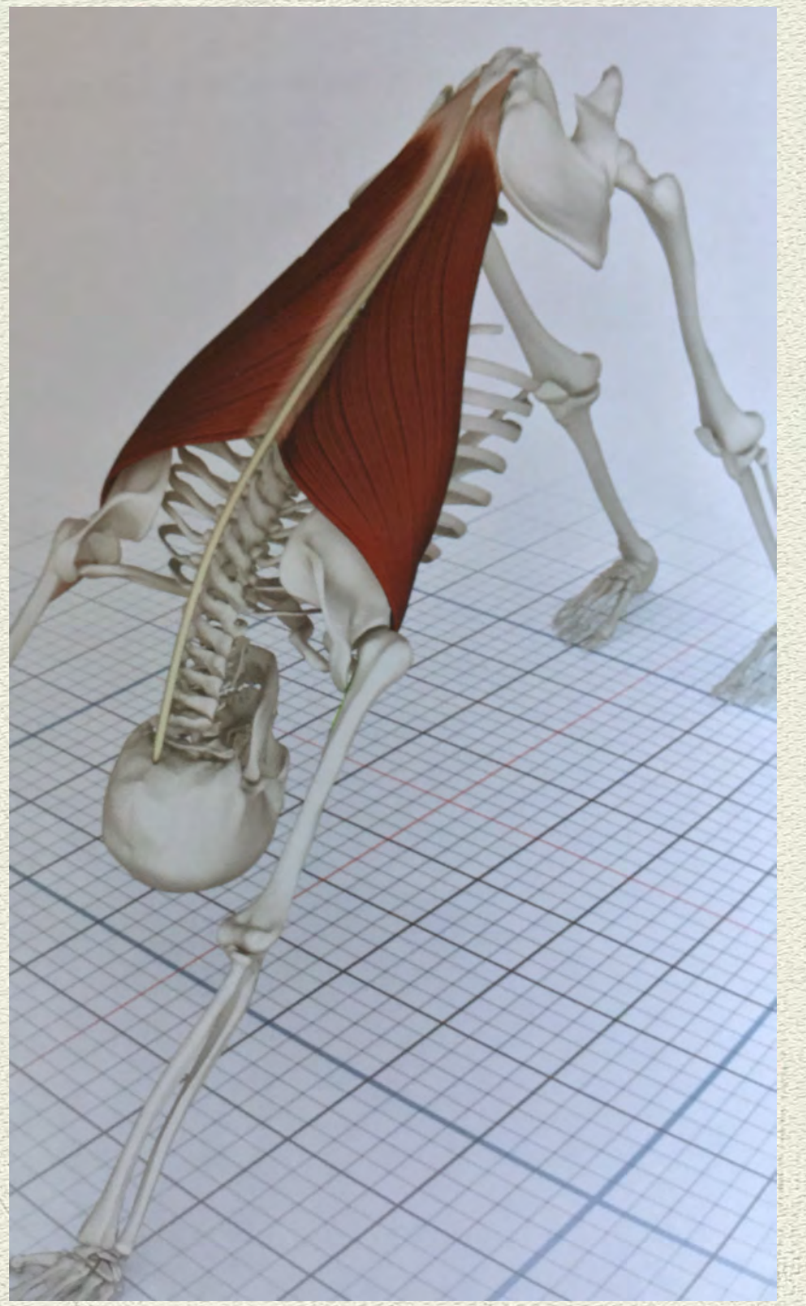
- Comprises the muscles of posture
- Strength in these tissues affords us the ability to hold our bodies upright, against the effect of gravity
- Weak back body generally means poor posture and the chronic pain that is associated with said postures
- Sitting at desk all day encourages poor posture habits.  Yoga can promote  “reverse posturing”

# Latissimus Dorsi

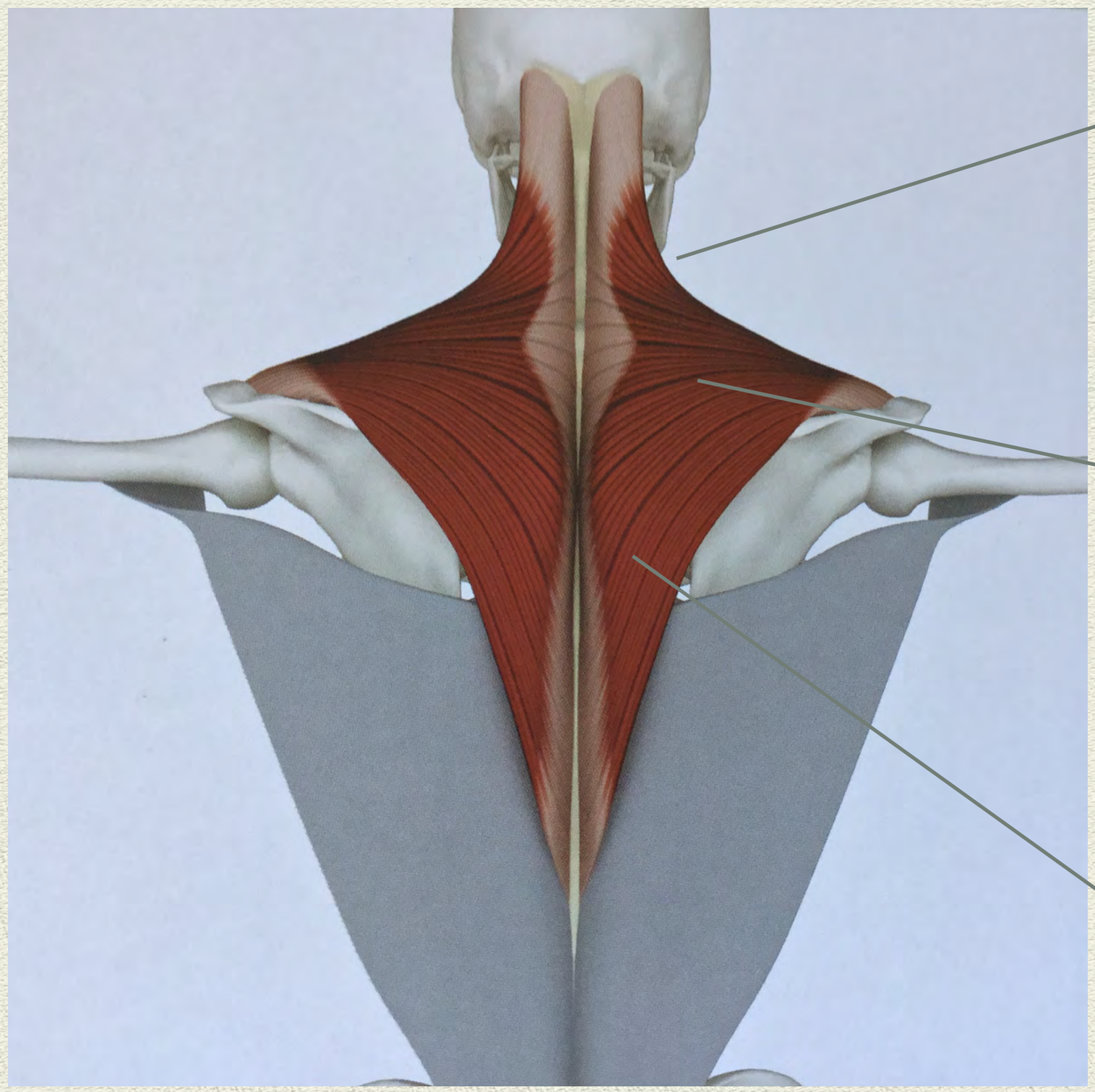


When the arm is NOT in a weight bearing position, Extends and adducts the arm

When the arm IS in a weight bearing position, it draws the chest forward



# Trapezius



Upper trap. Shrugs the shoulder and elevates the scapula.

Mid Trap. ADDucts the scapula

Lower trap. draws scapula downward

# Trap can be  a major pain generator

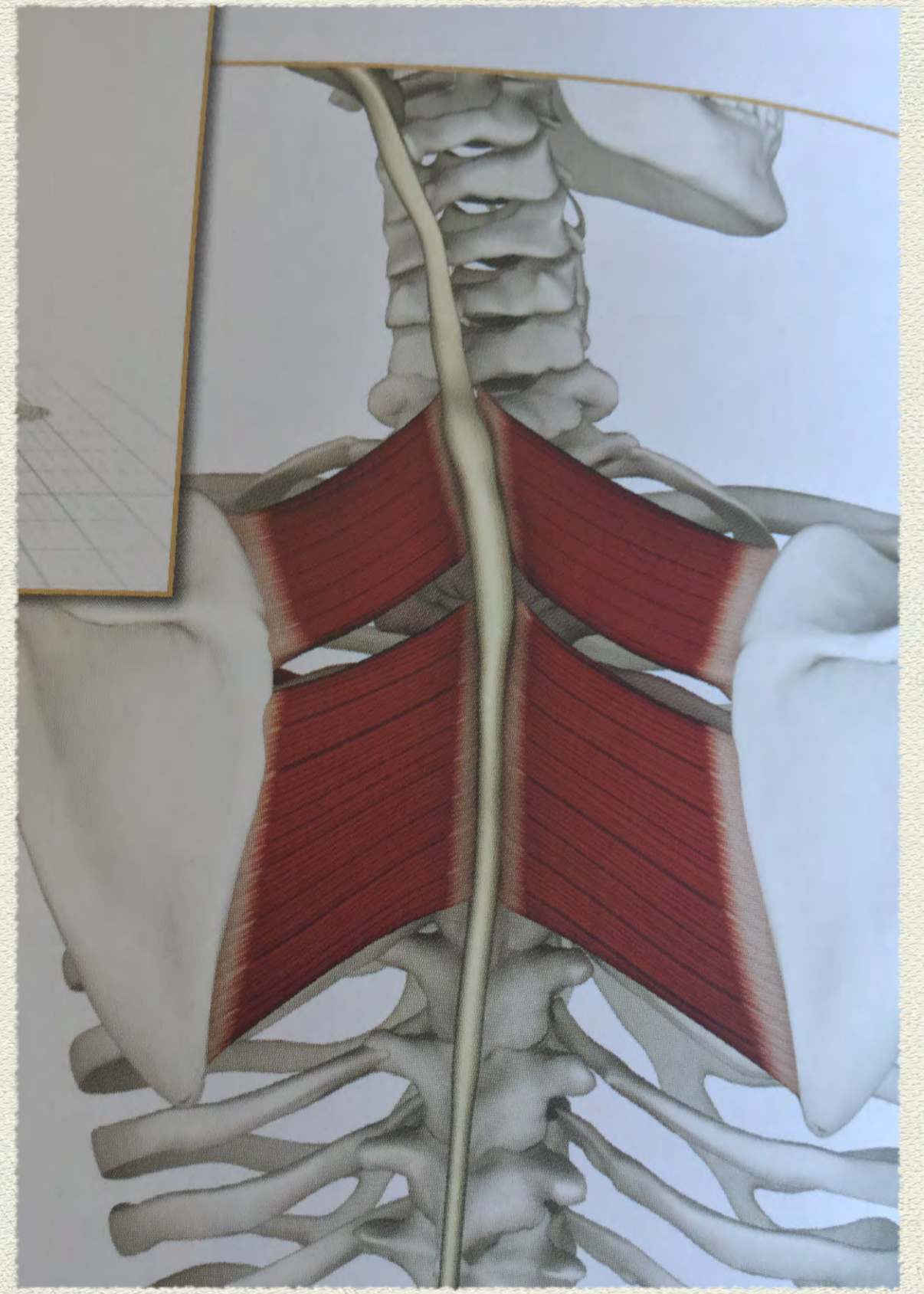
- Tightness in upper trap, combined with weakness in mid and lower trap can cause chronic headaches. This muscle is commonly imbalanced in many people.
- Imbalance in strength can  cause shoulder pain
- Forward head, round shoulder posture (desk work) promotes weakness in this power muscle of posture

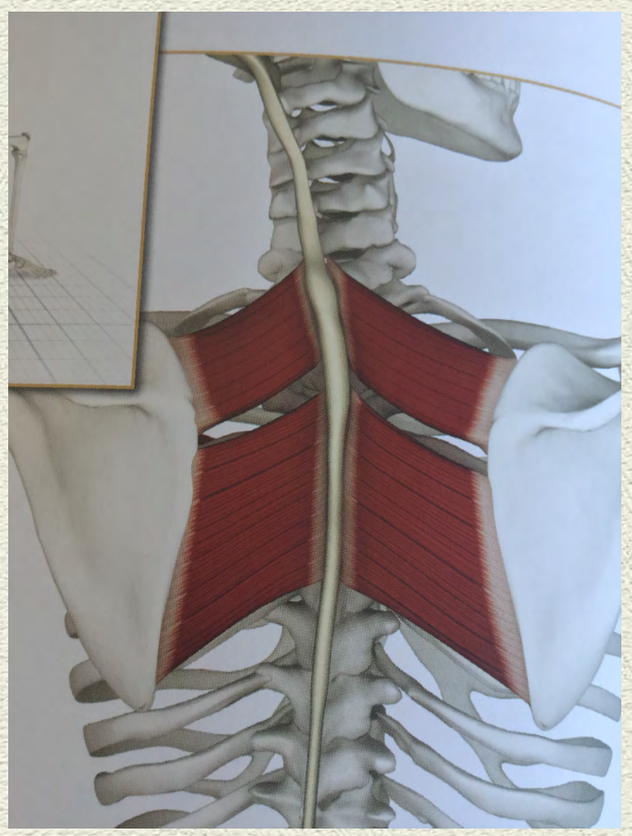
# Common cues for the trapezius

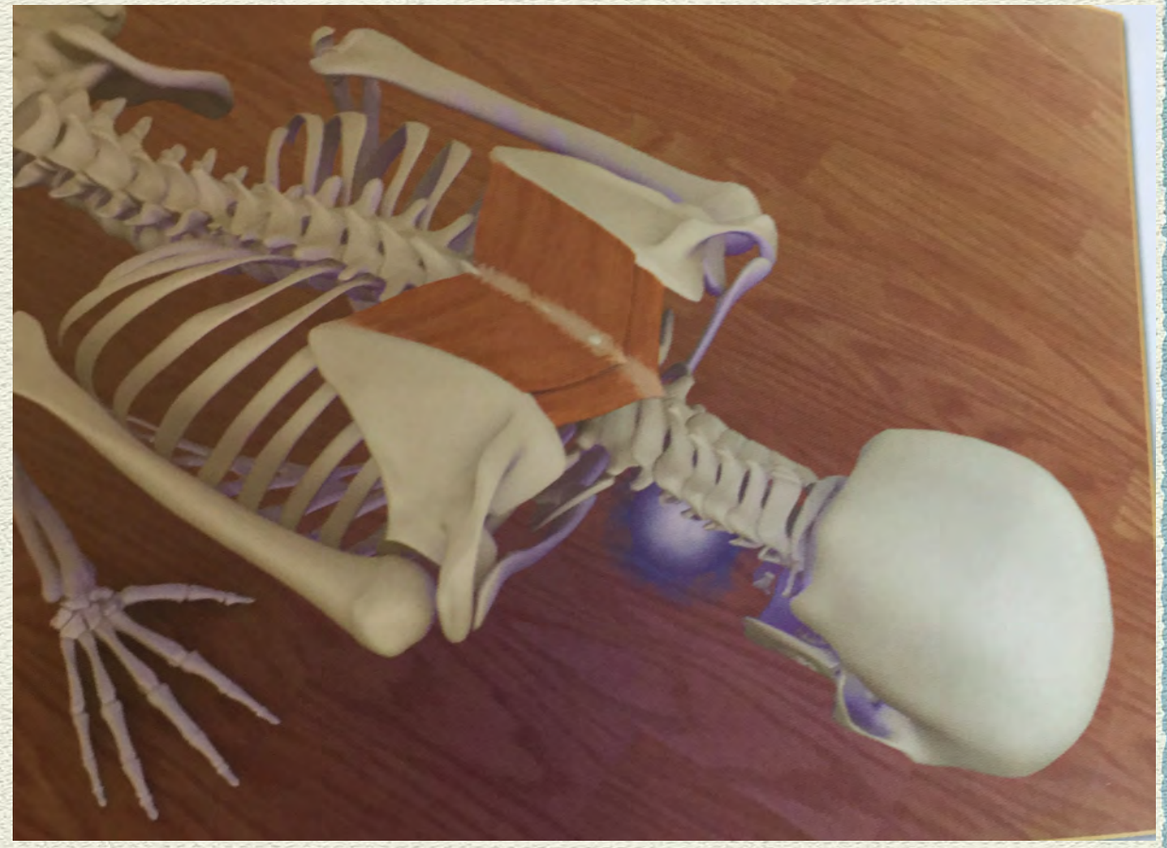
- "Open heart": Middle trap
- "Drop shoulders away from ears": Lower trap.
- "Shrug shoulders up toward ears": Upper trap.
- One muscle with 3 distinctly different actions
- Ideally we ID upper, mid or lower with our cueing

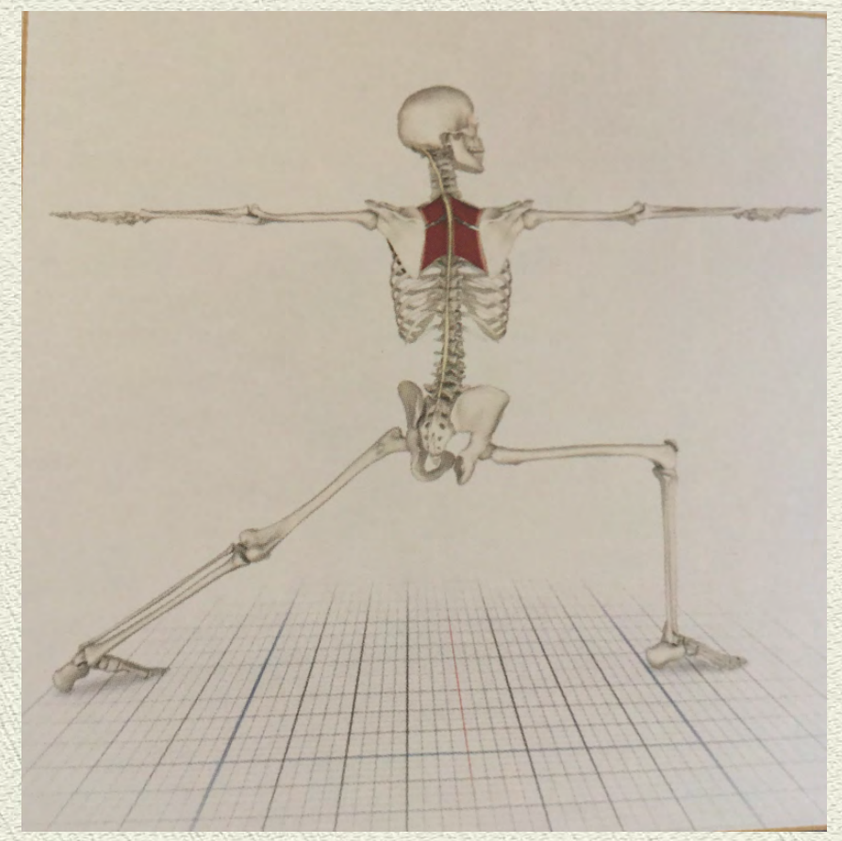
# Rhomboids

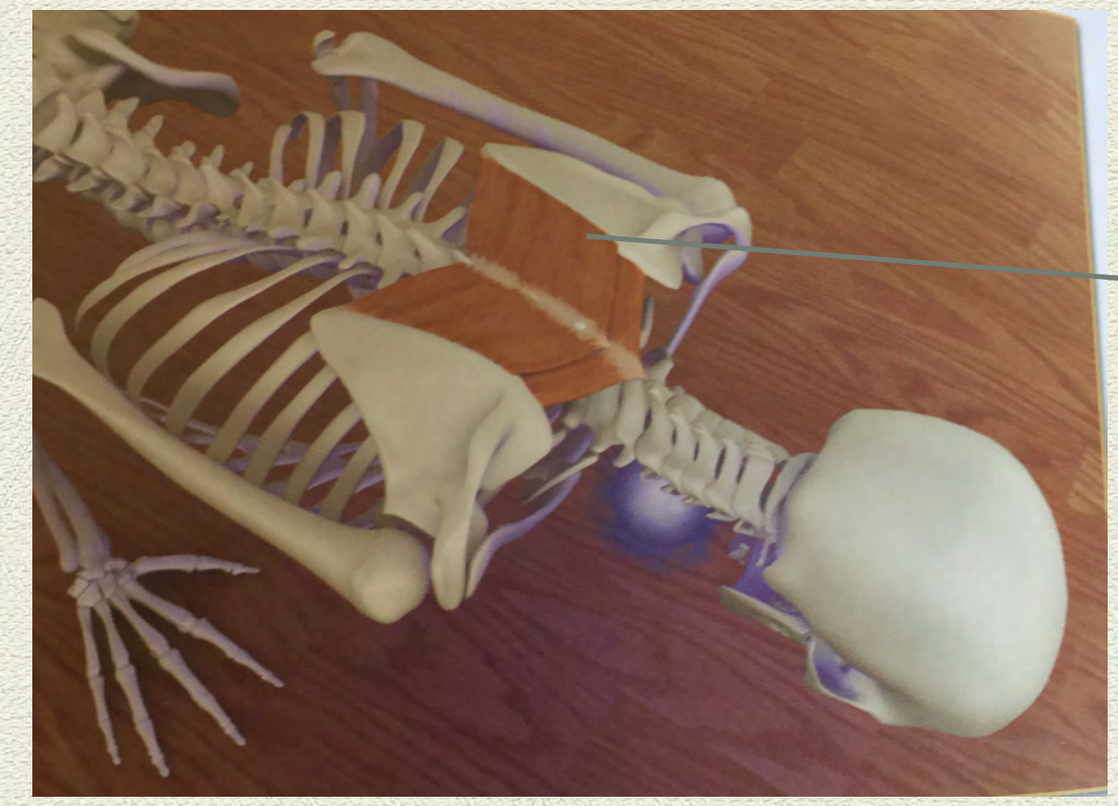
*Retract the scapulae*
*Major muscle of posture.*
*Are weak in a "slouch" posture*
*Work in opposition to the pec minor*
*Commonly develop spasms if they are weak*





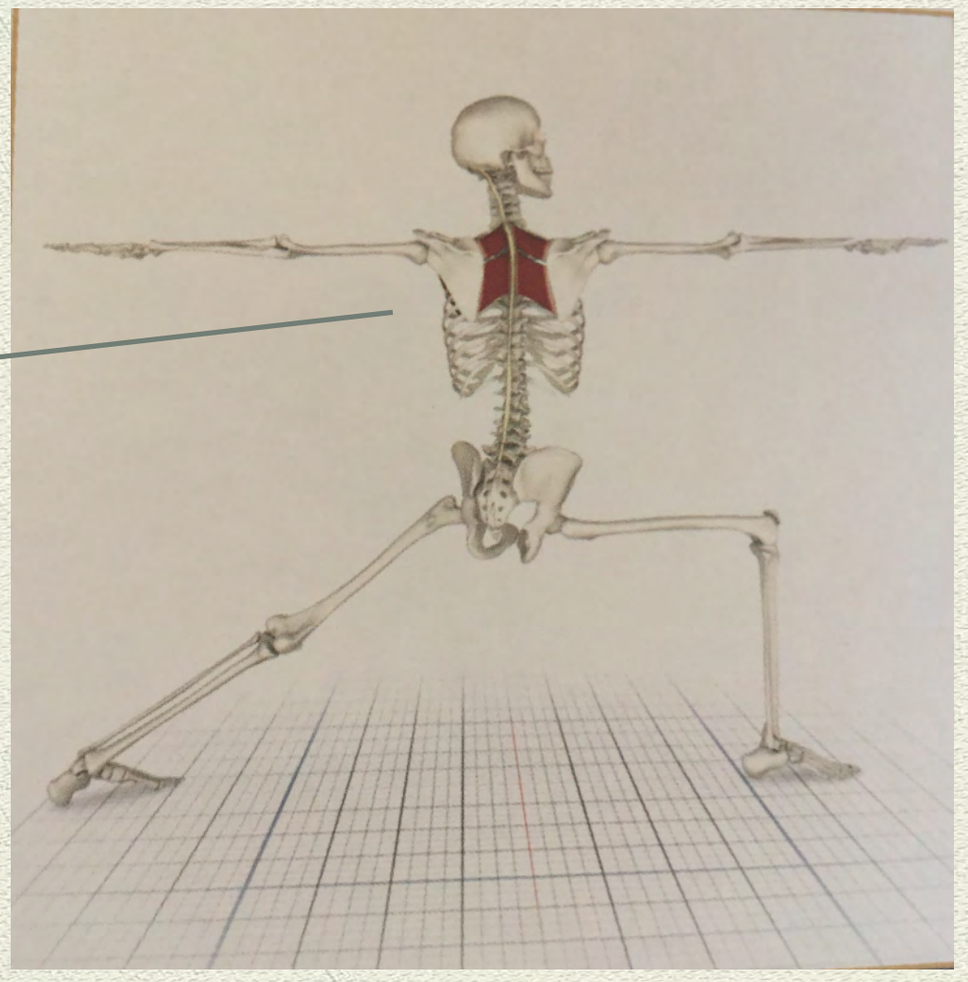




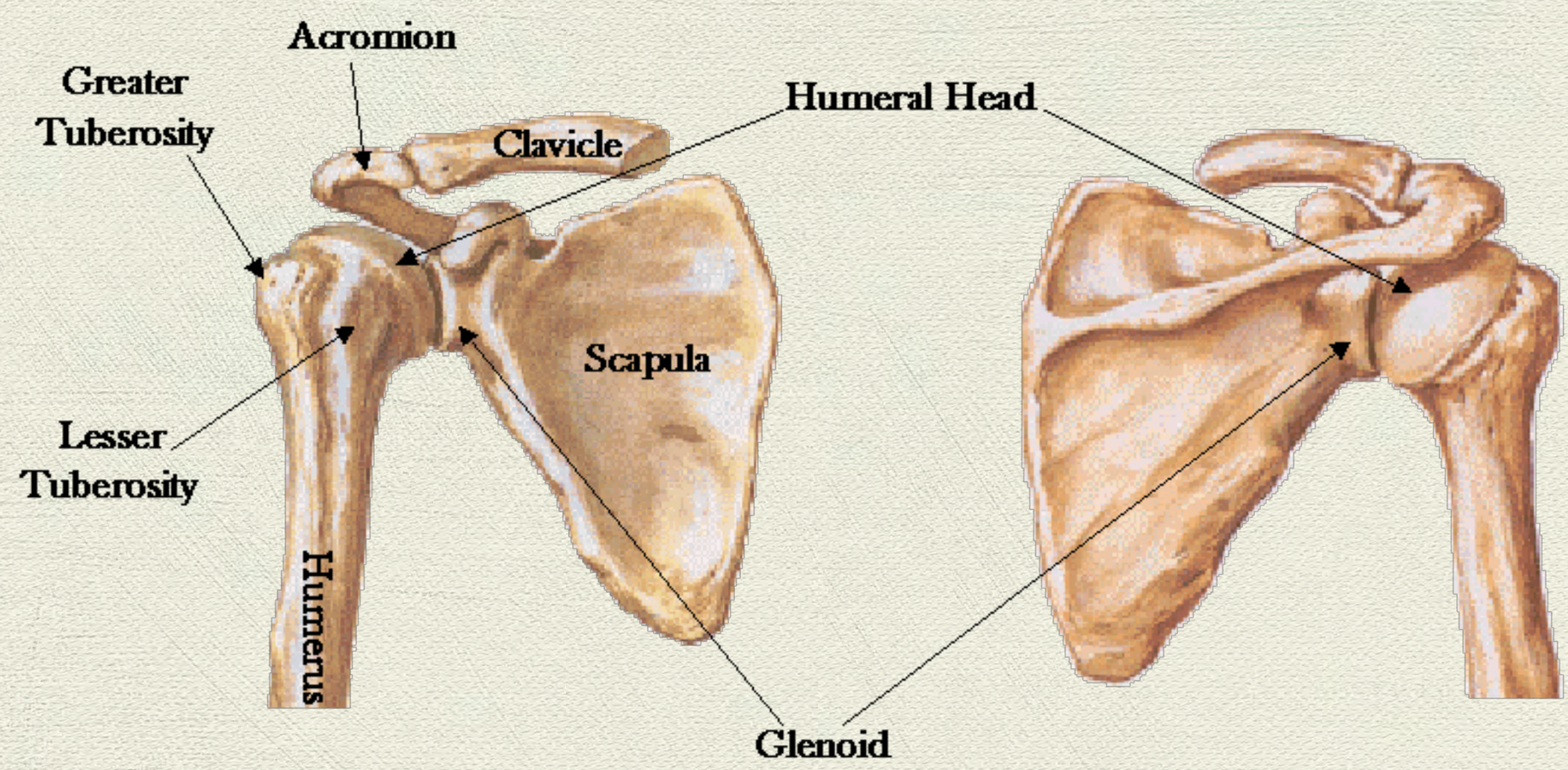


Rhomboids prevent scapula from winging

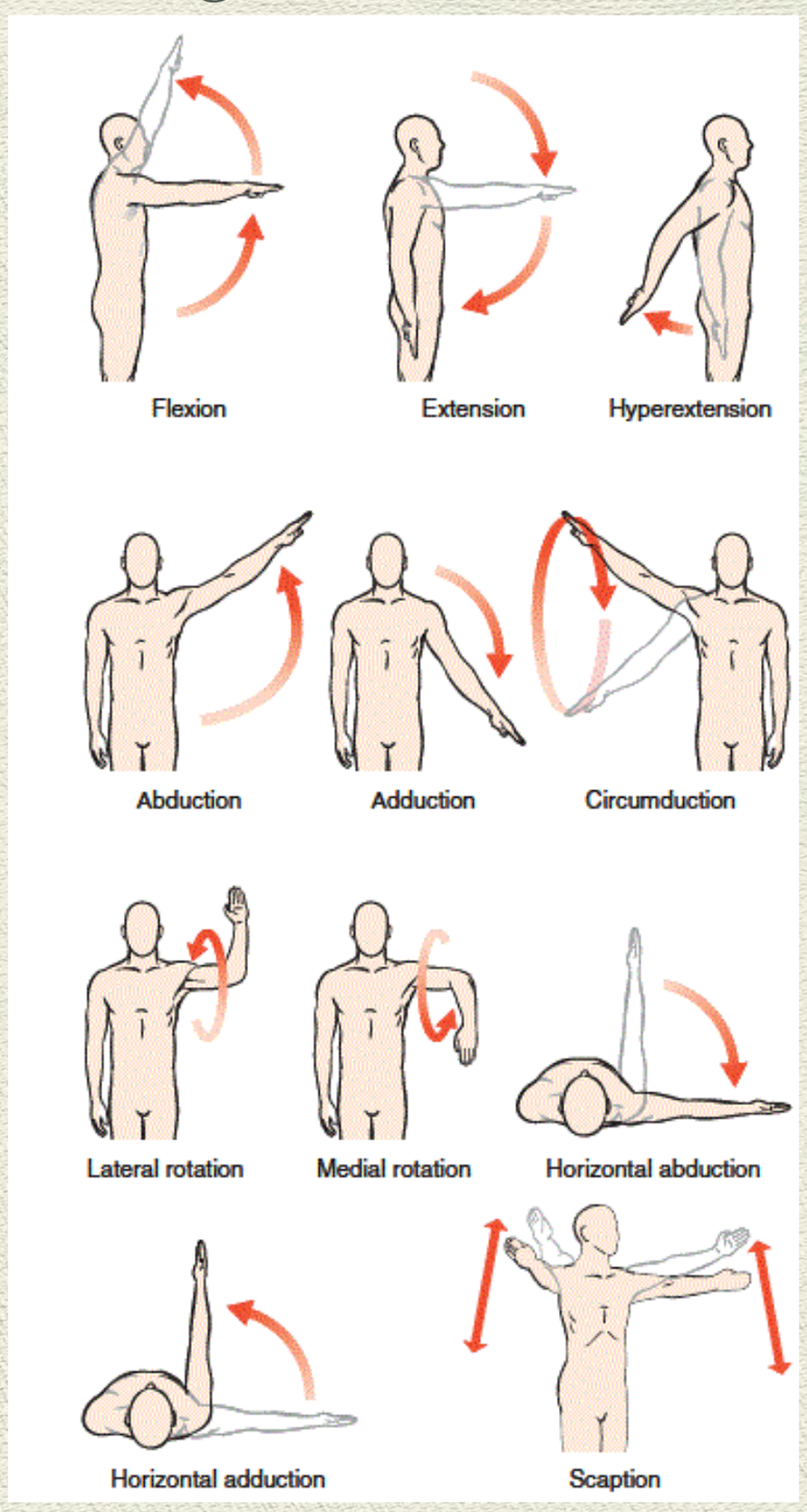
They maintain the open chest while in Warrior II

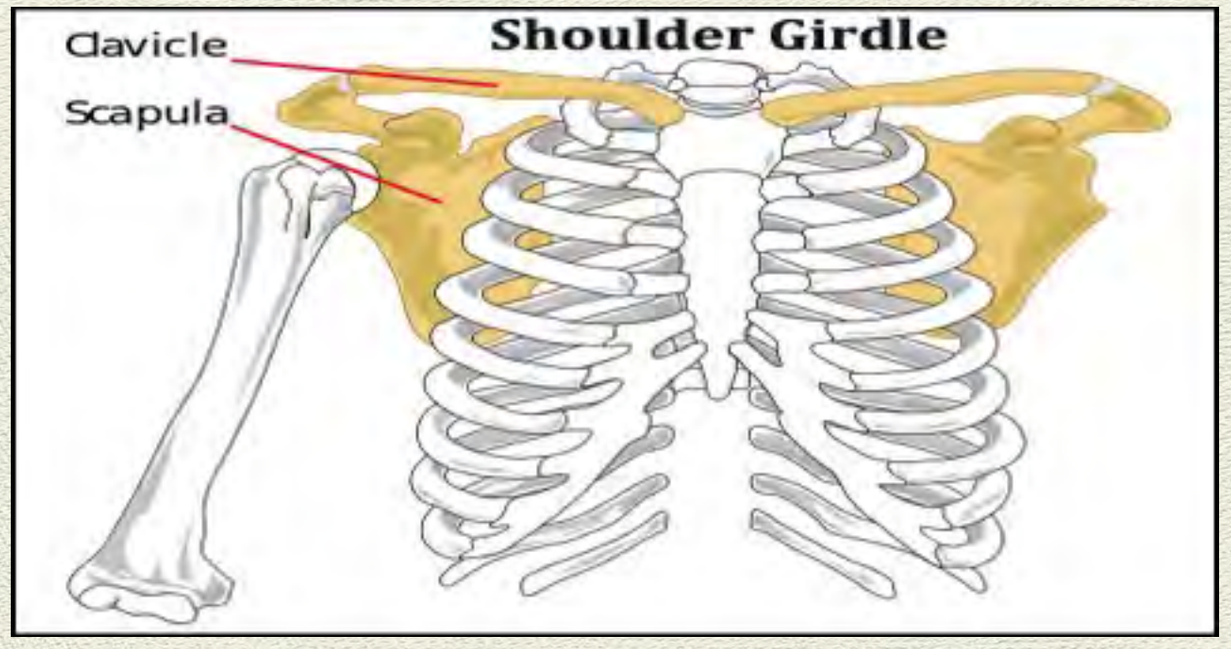


# BALL-SOCKET JOINT



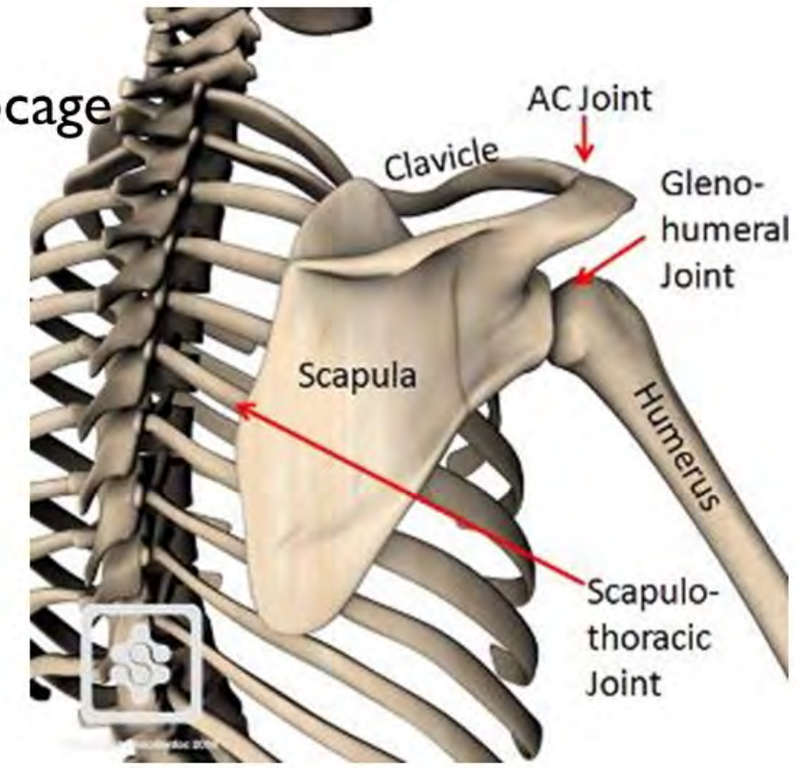
# Motions of the glenohumeral (ball-socket) joint





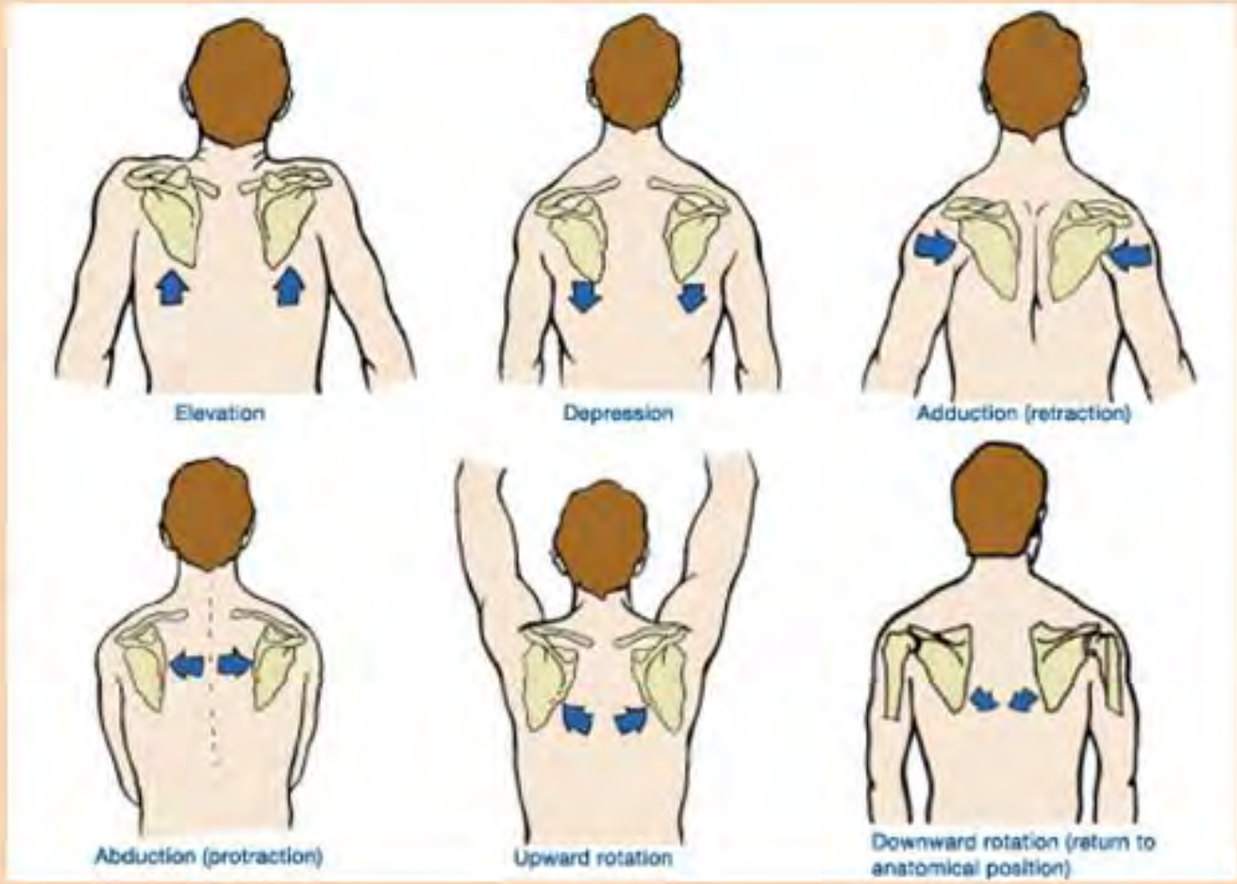

# Scapulothoracic Joint

- Scapula
- Posterior ribcage

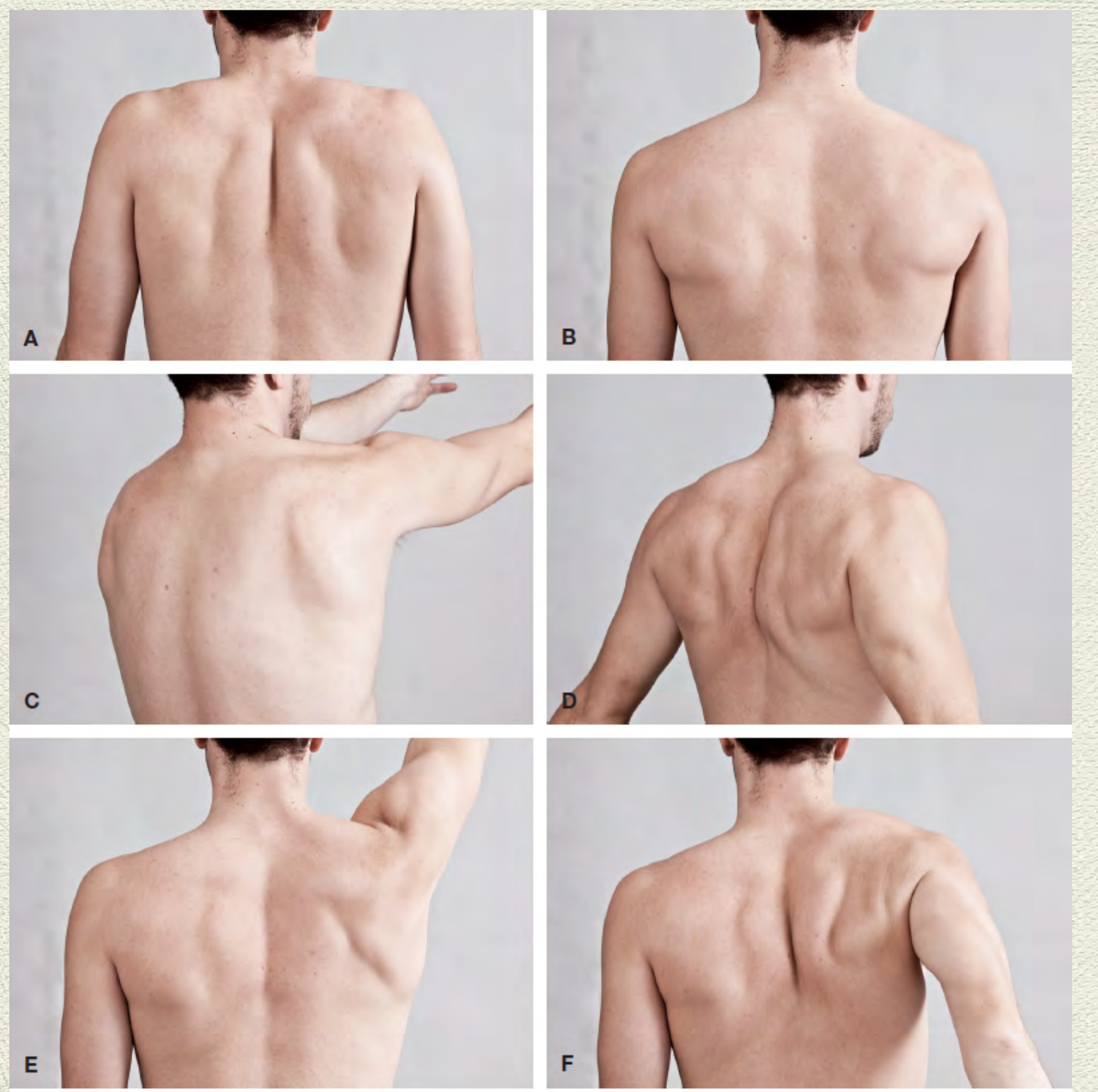


# Scapular Movements

- **Scapular Elevation**:
  - Levator Scap
  - Upper Trapezius
- **Scapular Depression**:
  - Lower Trapezius
- **Scapular Retraction**:
  - Rhomboids (Major and Minor)
- **Scapular Protraction**:
  - Serratus Anterior



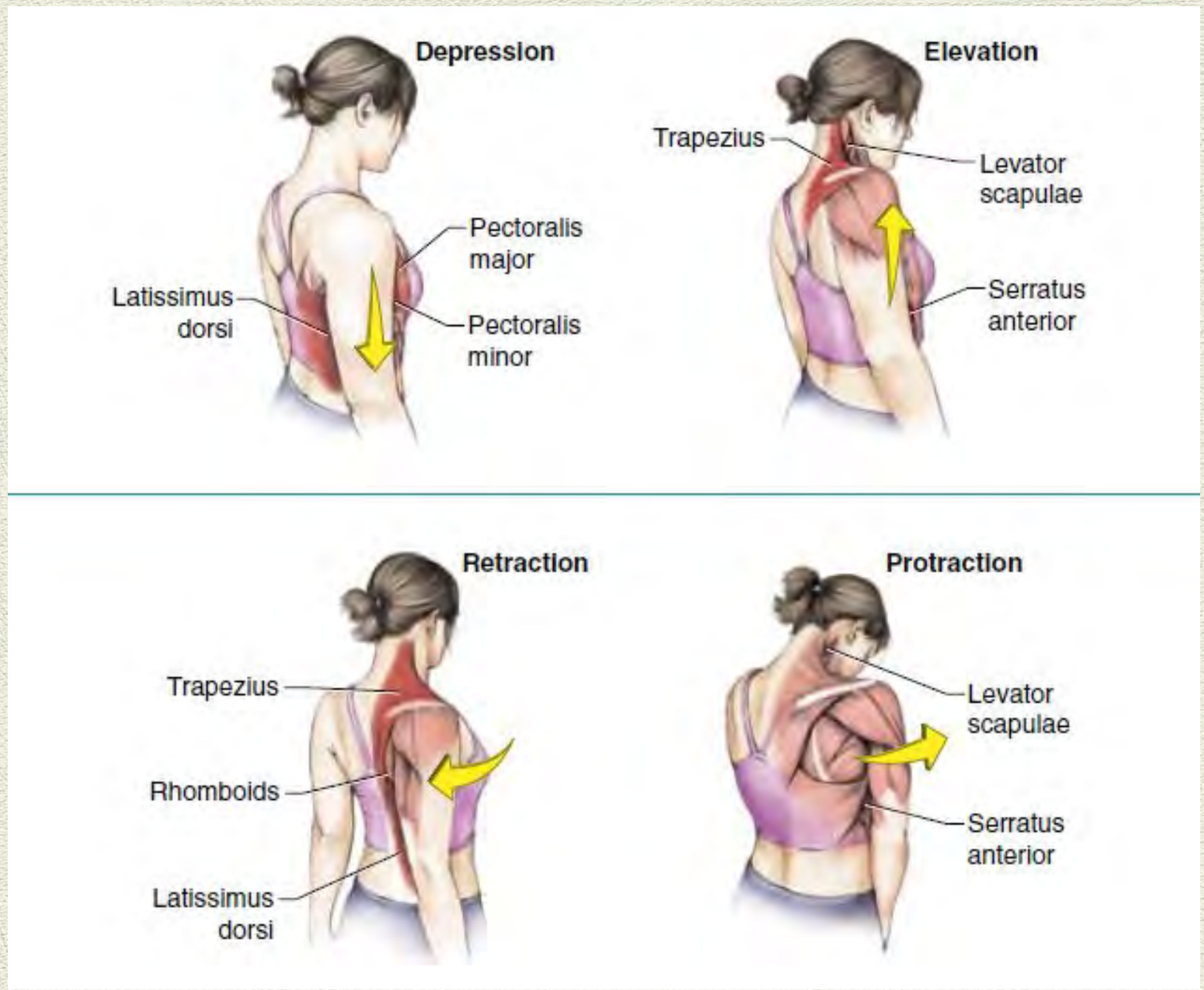
# Scapular motions




Source: Peggy A. Houglum, Dolores B. Bertoti:
Brunnstrom's Clinical Kinesiology, Sixth Edition,
www.FADavisPTCollection.com

Mountain Pose

Shoulder Shrug




Heart Open

Widen upper back

# Serratus Anterior

*Protracts the scapula*

*Accessory muscle of breath*

*Weakness in this muscle results in winging of the scapula*

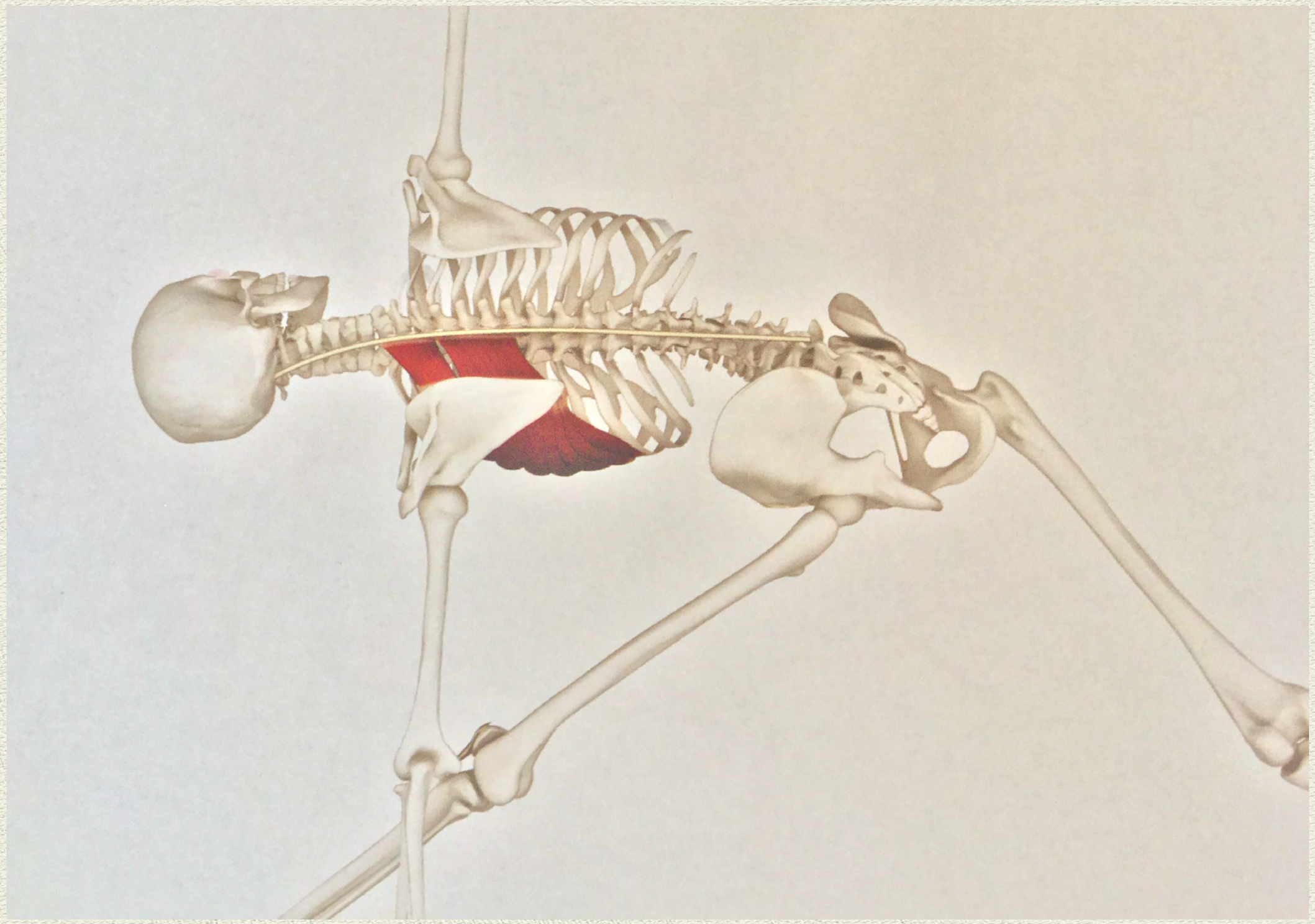
*Major stabilizer of the scapula*

*Works cooperatively with the rotator cuff and rhomboids*

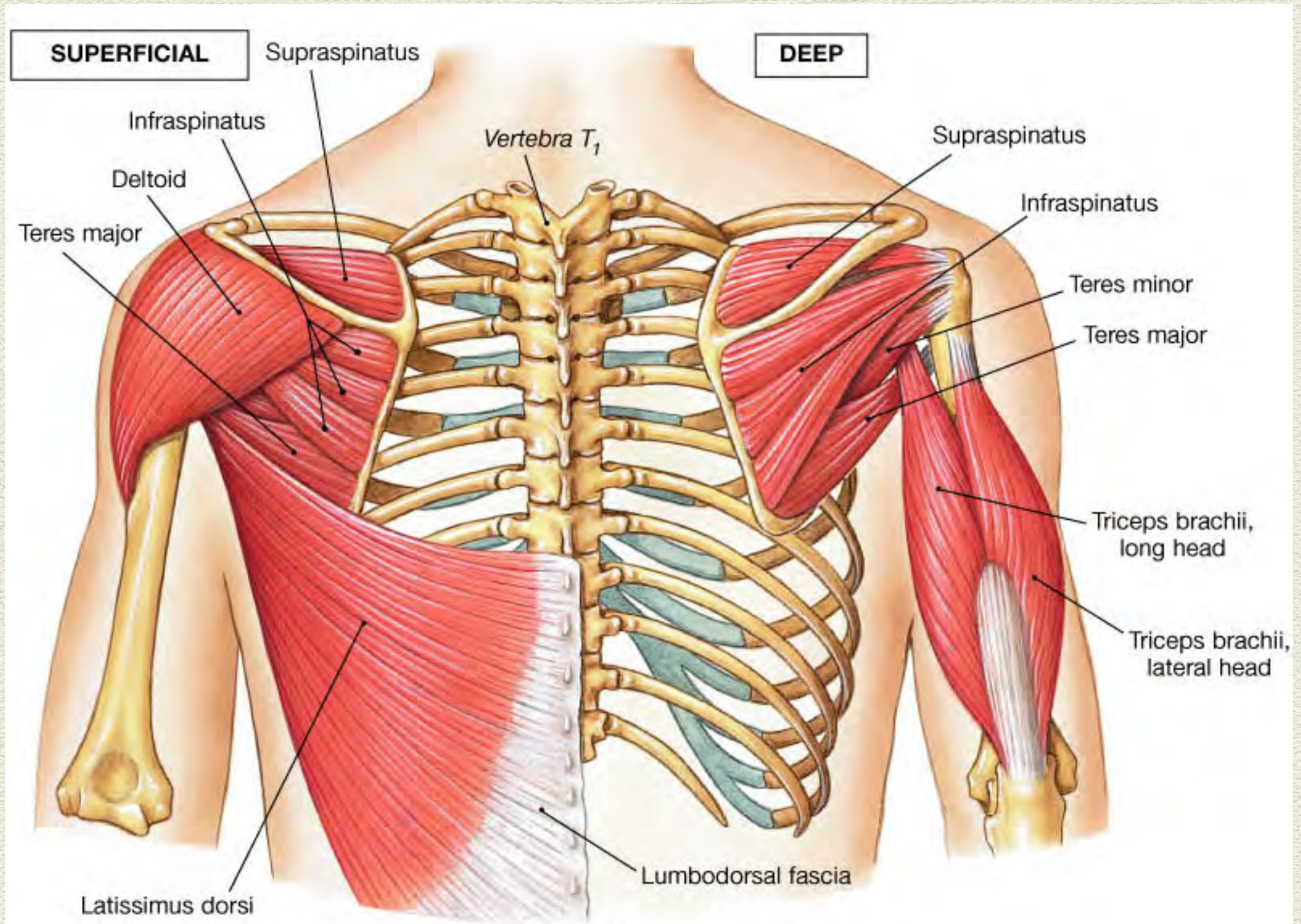
*Allows us to widen the back between the shoulder blades*

Serratus anterior widens the space between the shoulder blades to allow us adequate space to assume crow asana

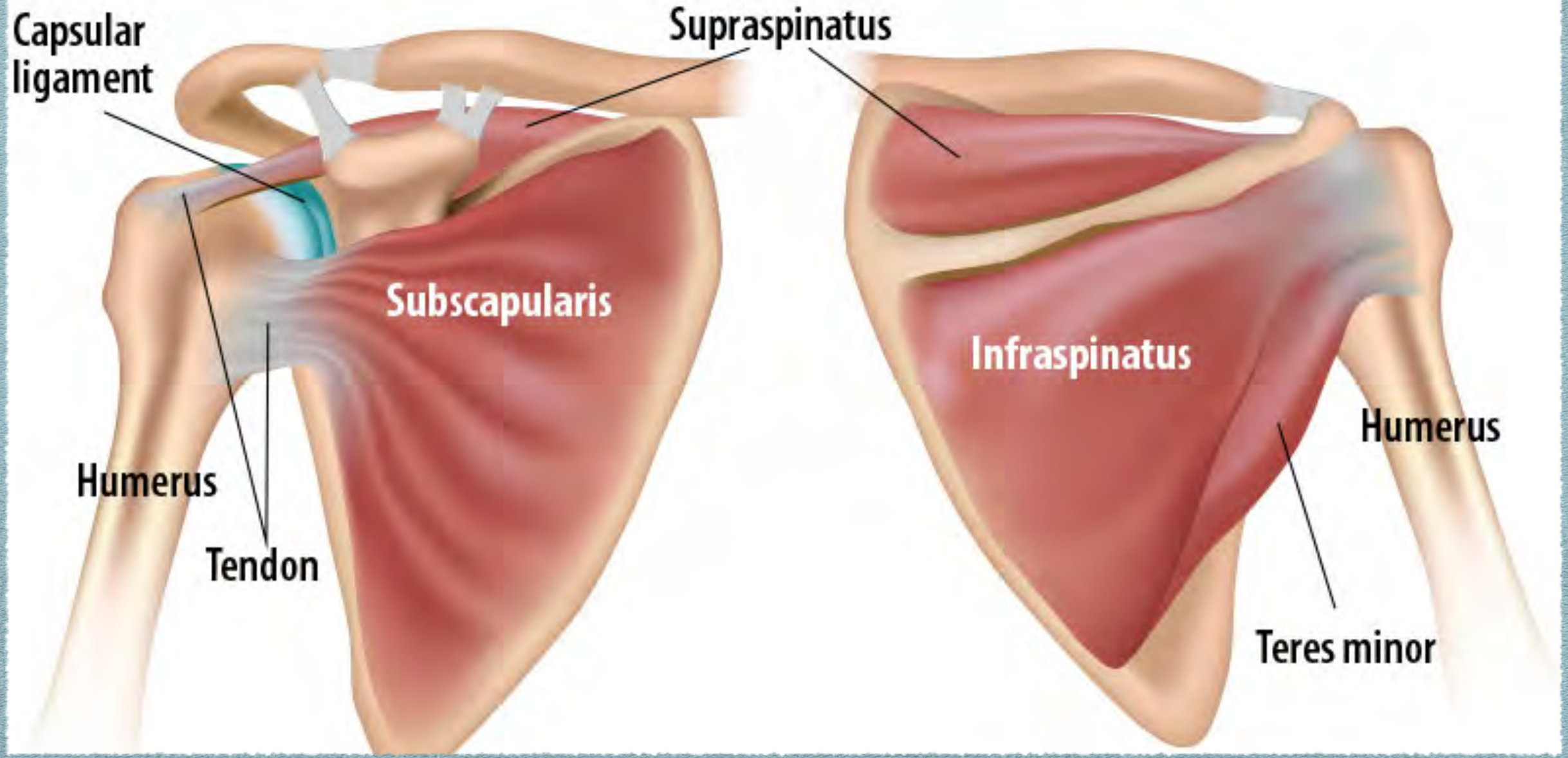
# Rhomboids and Serratus Anterior



# Muscles of the shoulder girdle (posterior)




**(b) Posterior view**




# ROTATOR CUFF

*NOT "CUP"*

# FUNCTION

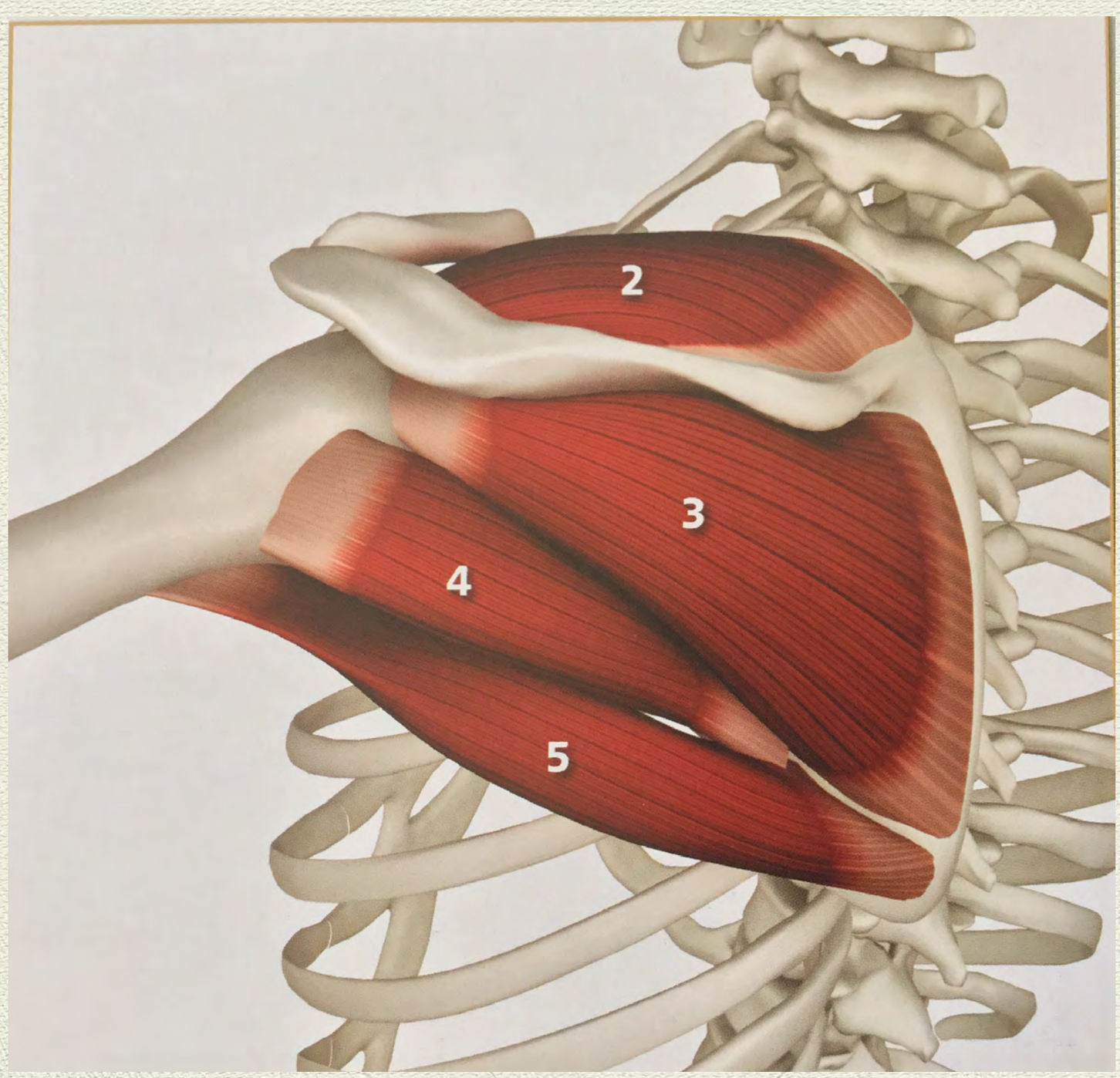
- Stabilizes the head of the humerus ( the ball) in the glenoid (the socket)
- “Golf Ball on tee”
- Entire rotator cuff resides on the scapula
- Tendons connect to the humerus
- All shoulder motion requires cuff engagement

# POSTERIOR CUFF

2. Supraspinatus: initiates abduction. Frequently injured

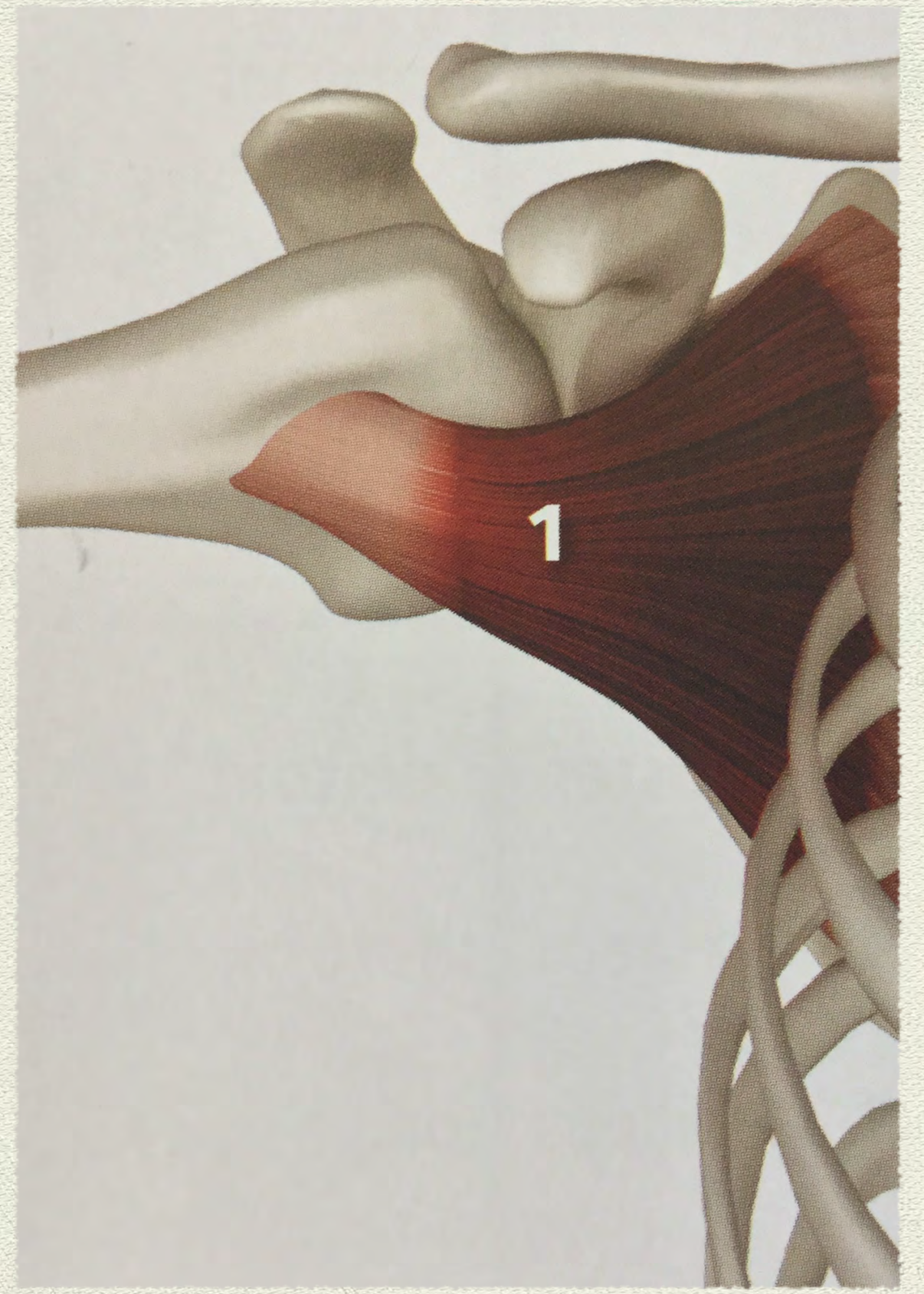
3. Infraspinatus
4. Teres Minor
5. Teres Major
Externally rotate the arm

Prevents impingement of the shoulder



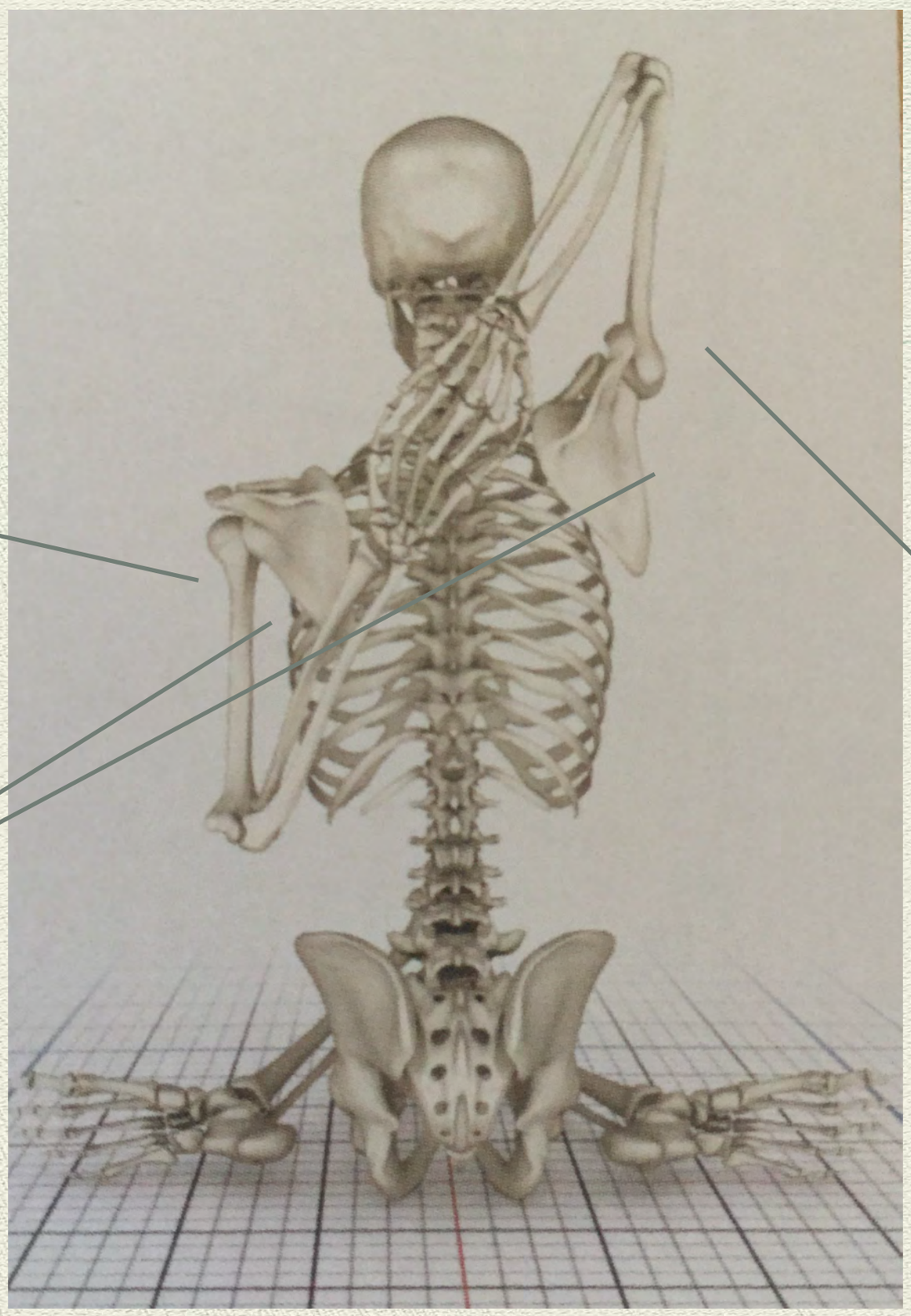
# Anterior Cuff

*Subscapularis*
*INTERNAL rotation*
*Tightness limits “cactus arm” and overhead postures*

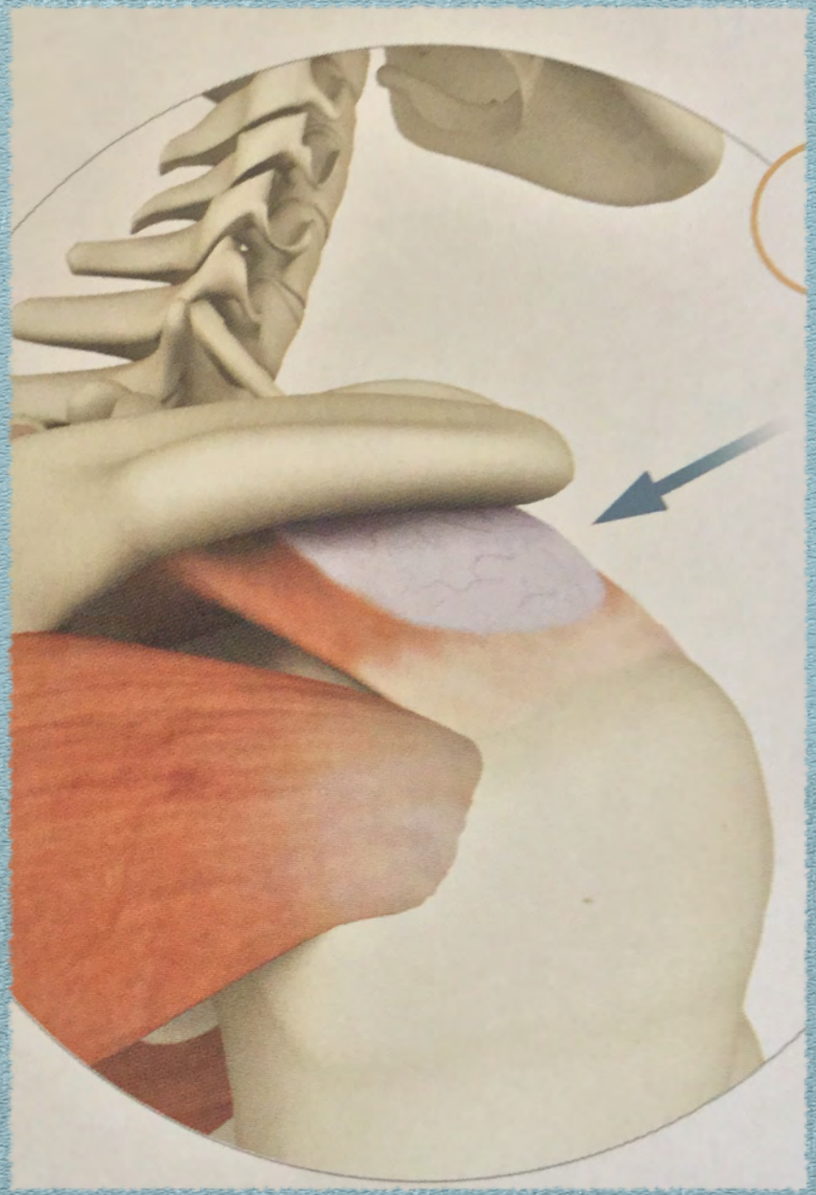


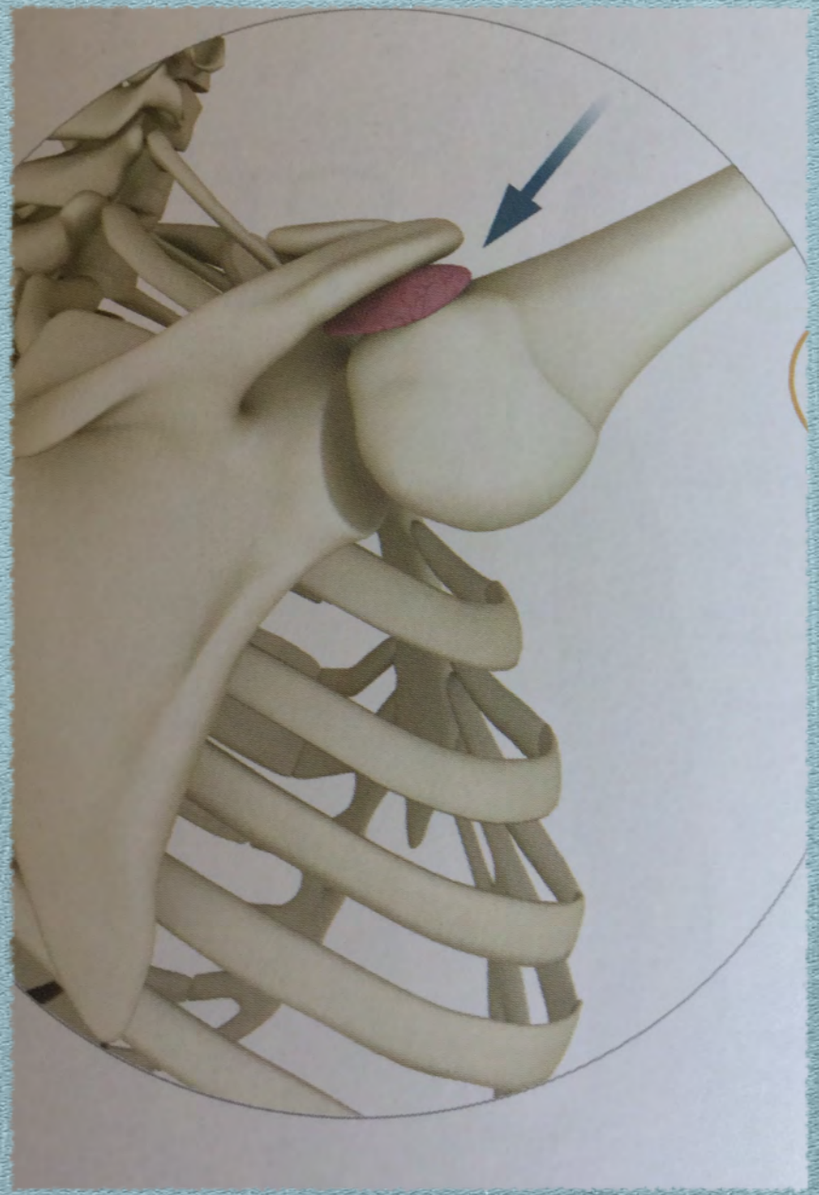
Internal rotation of the shoulder: anterior cuff (subscapularis)

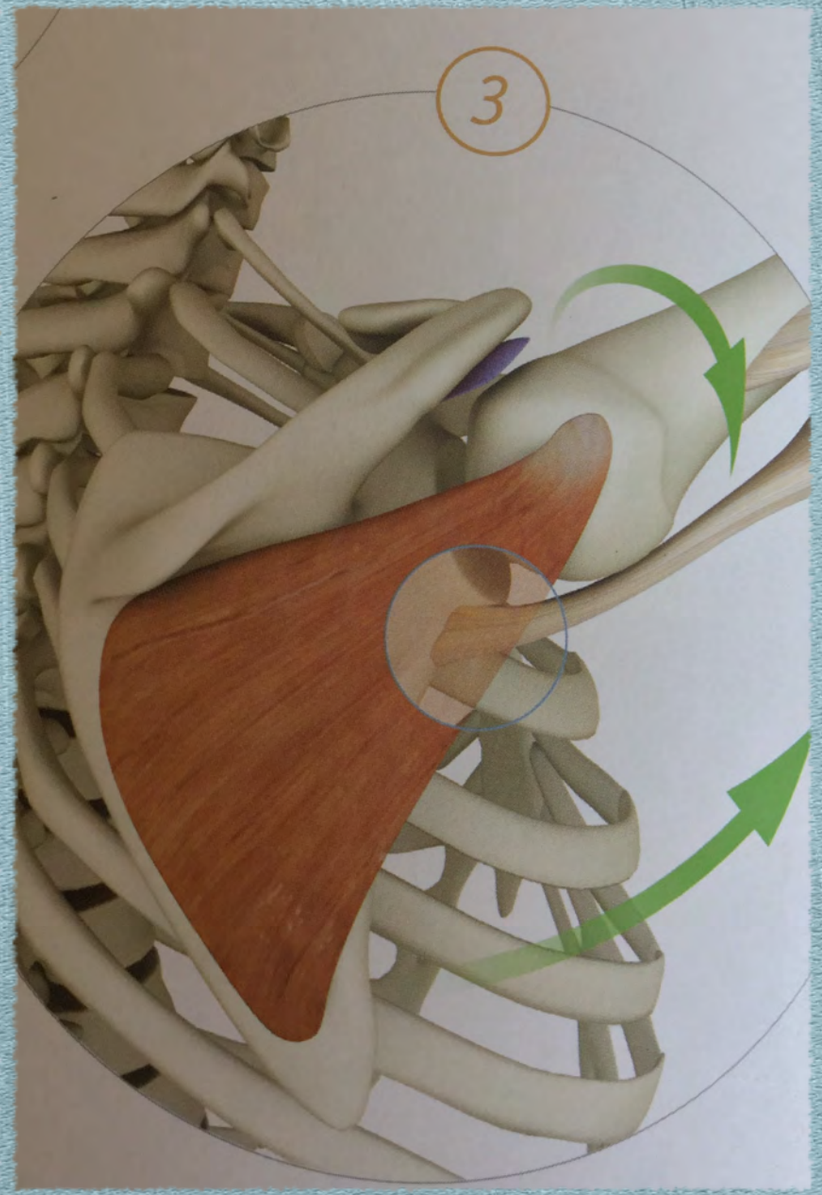
Note the opposing postures of the scapulae to place the arm in these positions



External rotation of shoulder: posterior cuff








# Impingement

*Most common cause of shoulder pain*

# Impingement: Causes

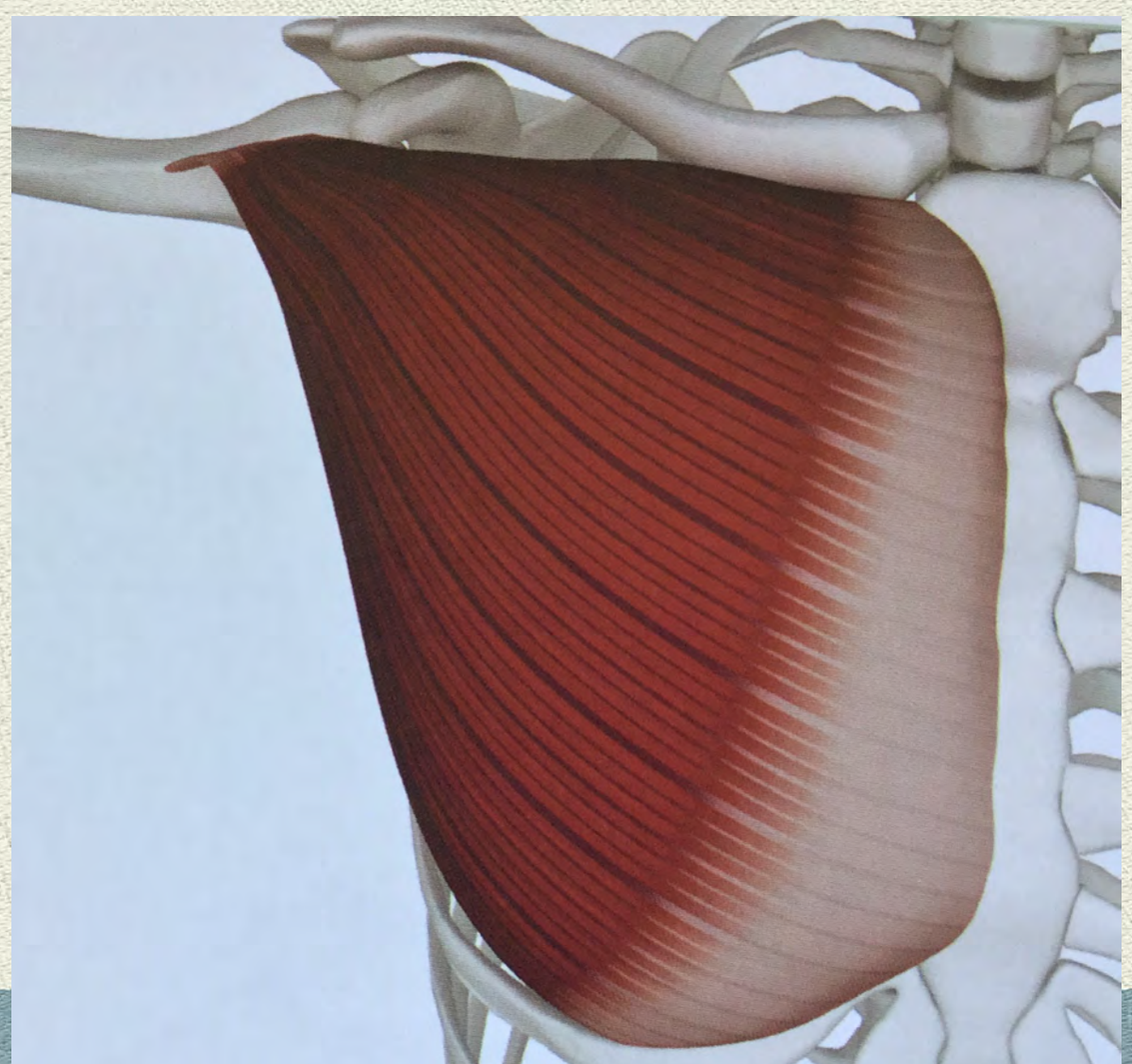
- Poor  mobility and stability of the thoracic spine "slouch posture"
- Poor rotator cuff strength
- Poor form with arm balancing, chataranga and "dog" poses
- Can lead to significant injury in the shoulder

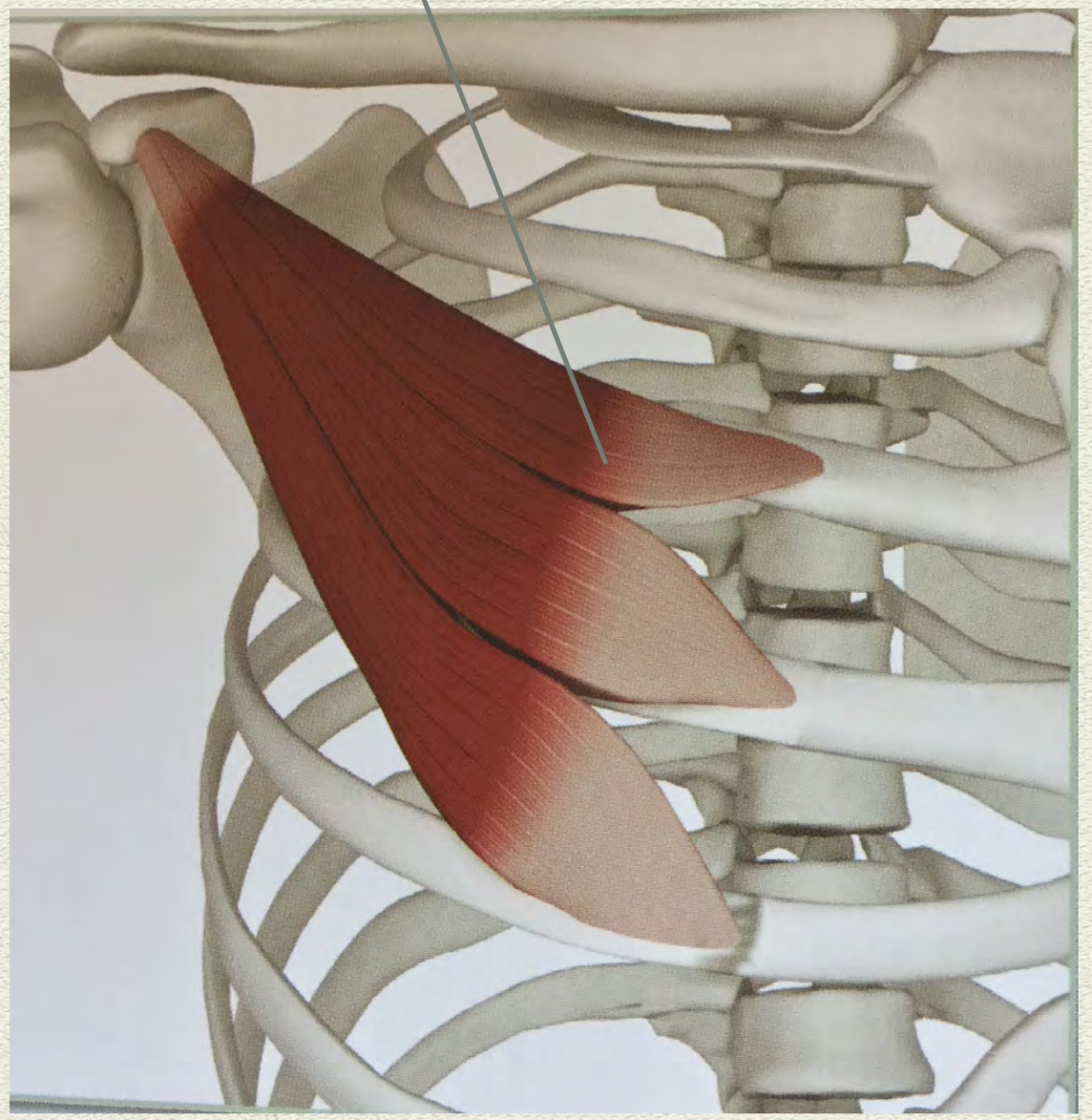
# ANTERIOR SHOULDER GIRDLE

*THE FRONT BODY*

Pectoralis Major

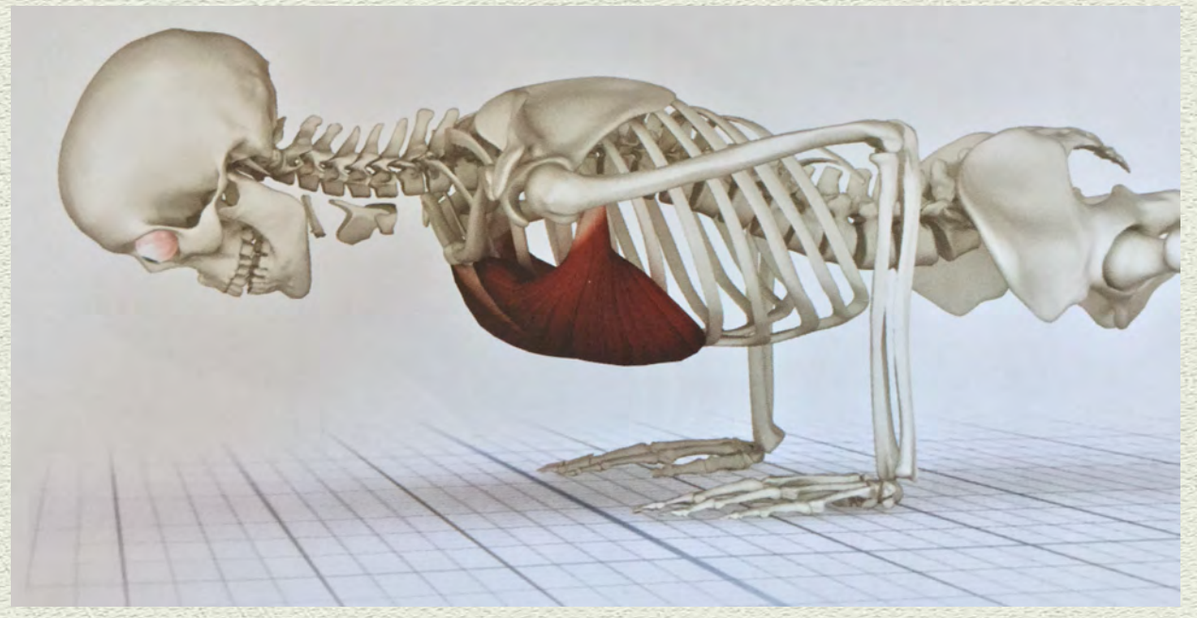
Pectoralis Minor

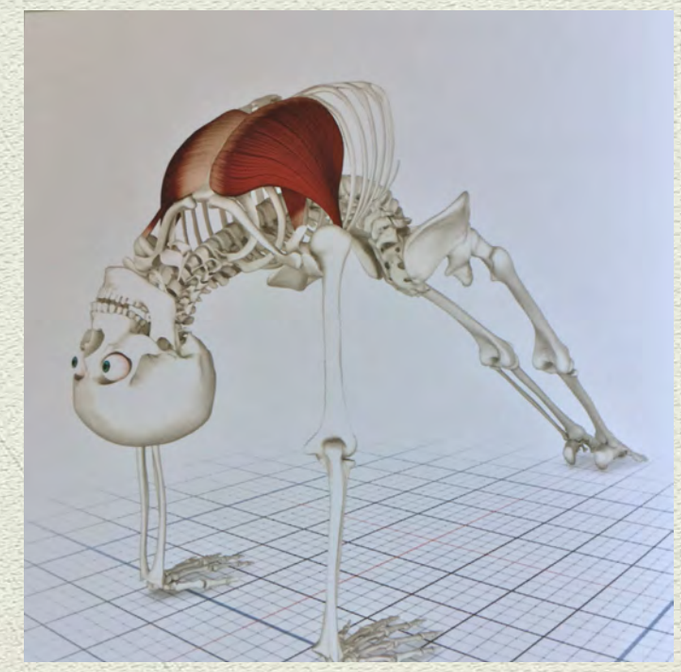




# Pectoralis Major

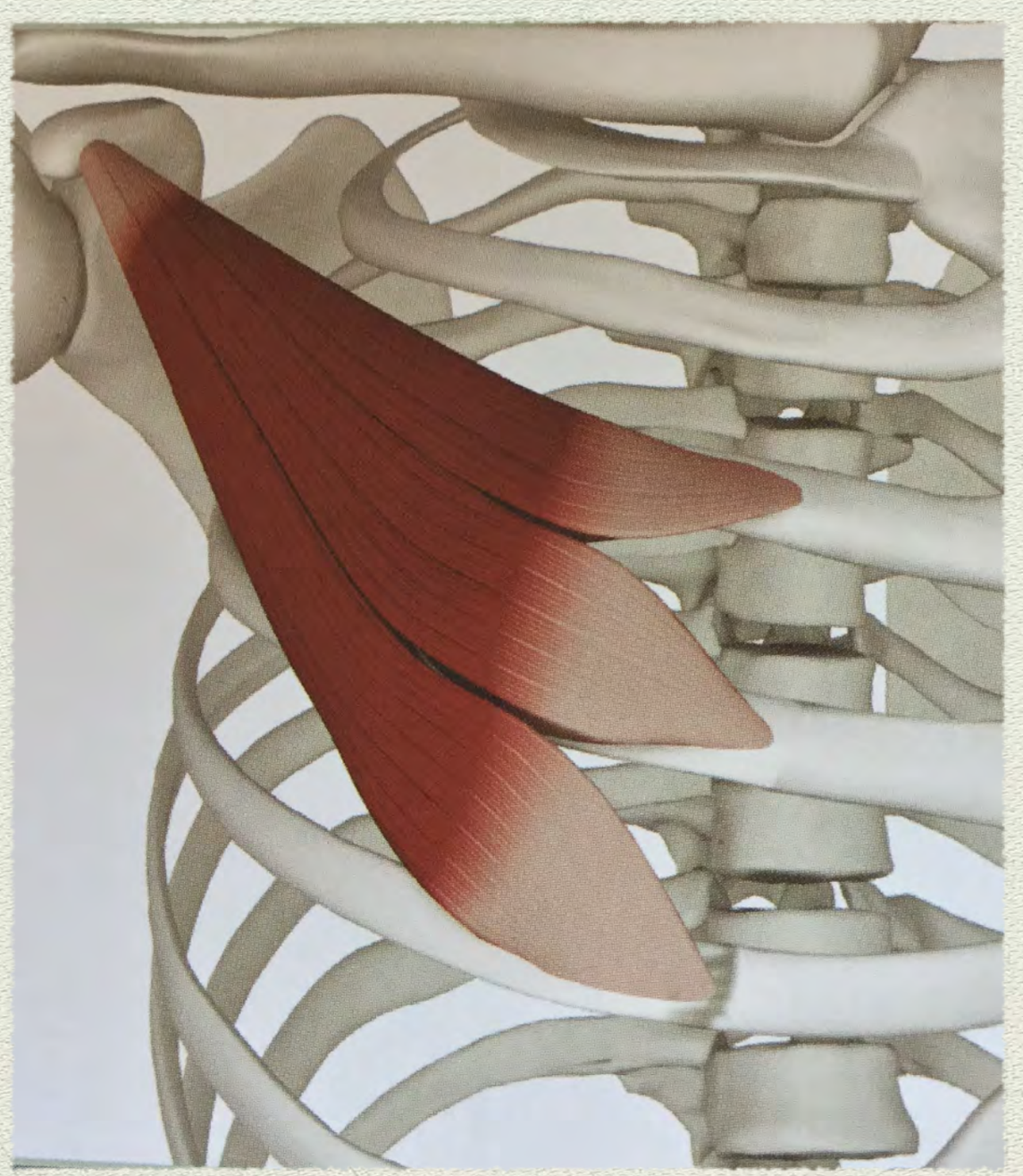
- Gets all the attention!!
- Adducts and internally rotates the arm
- Major player in all plank, chataranga,  press up (up dog), and back (down dog) poses.
- Tightness in this muscle can restrict overhead mobility and ability to open the chest wall

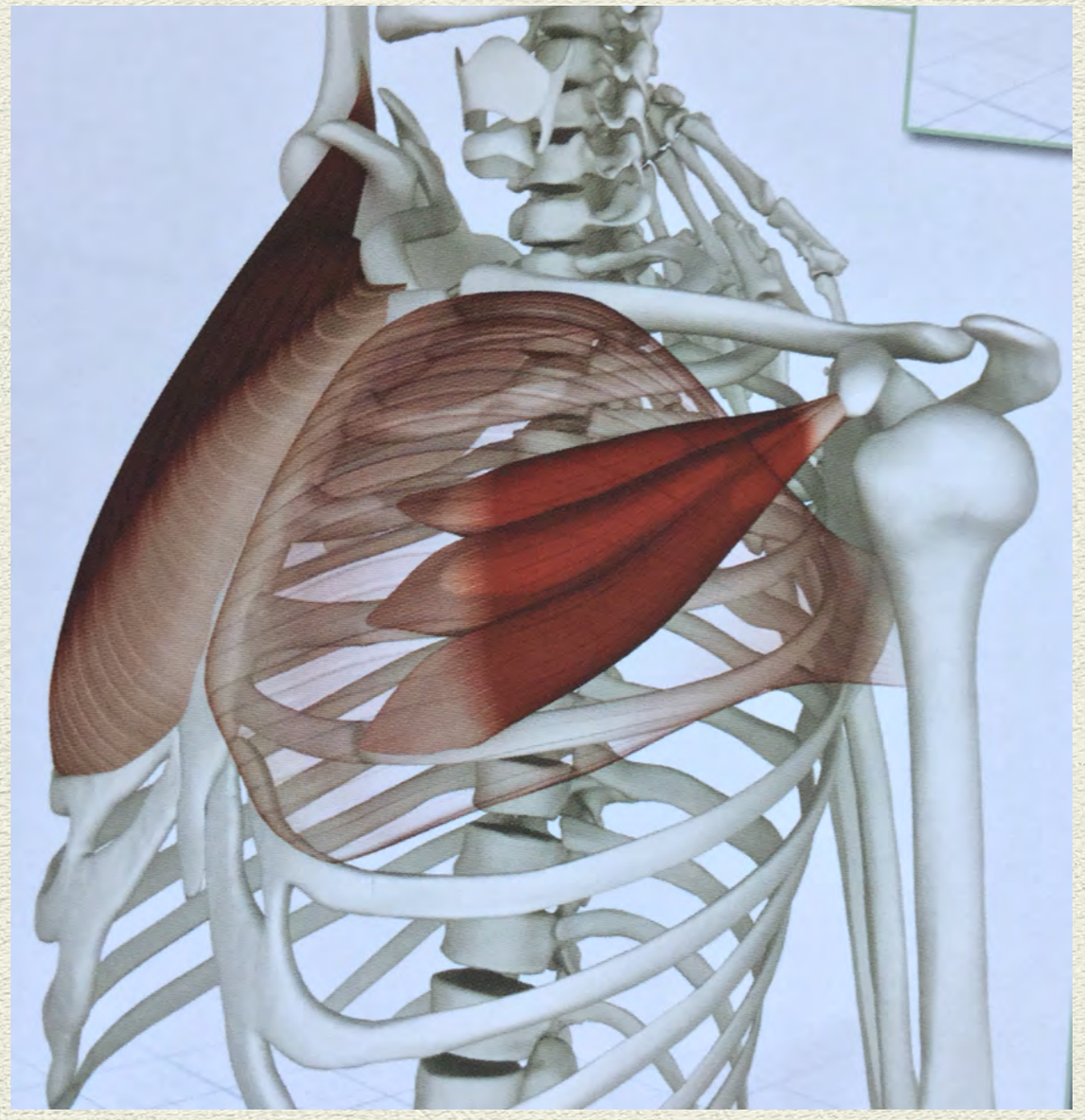




# Pectoralis Minor

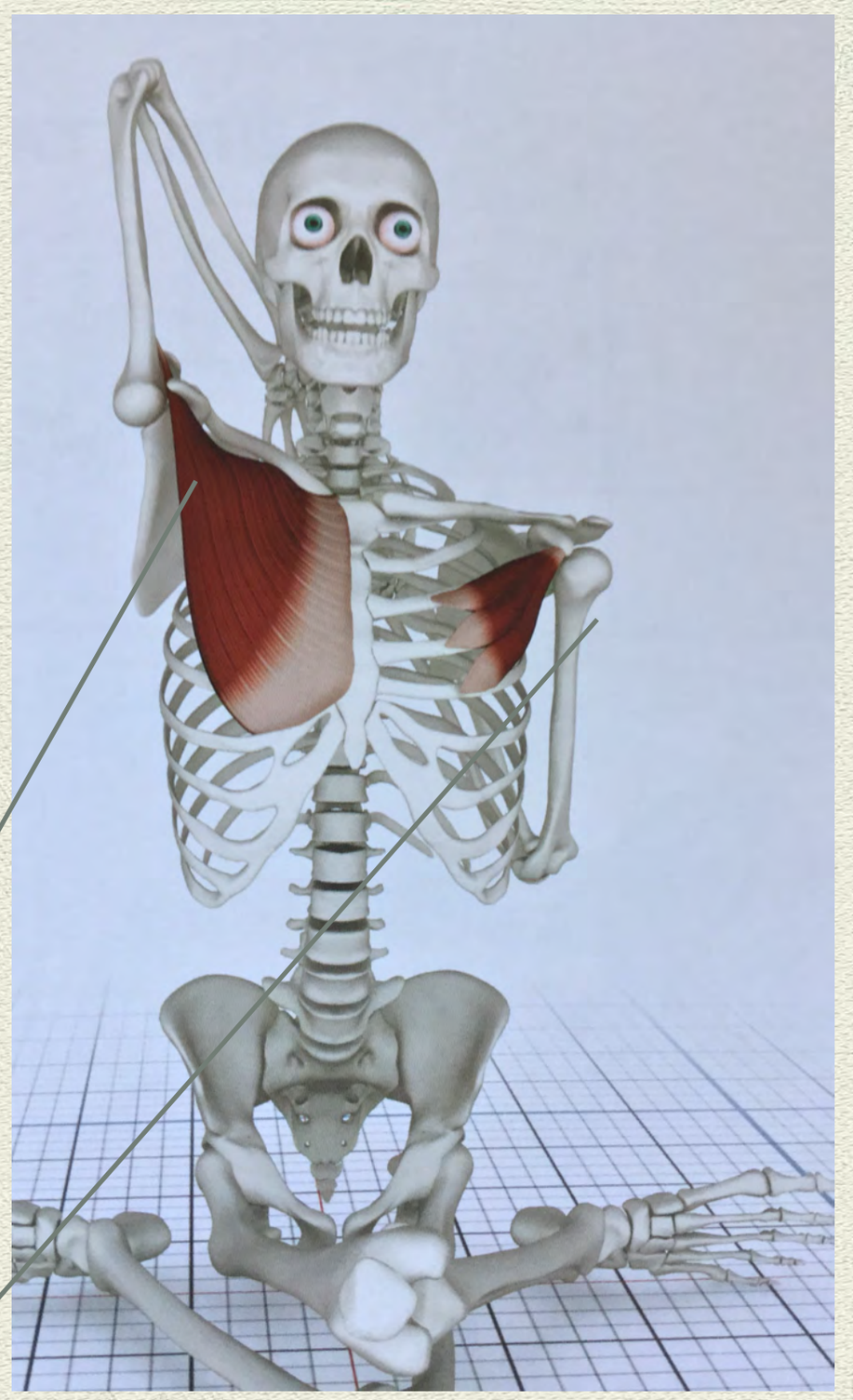
- The silent problem maker
- Protracts the scapula
- Accessory muscle of breath
- Tightness typically manifests as “Slouch” posture
- Tightness can create shoulder impingement and promote weakness in the mid. Trap and the rhomboids





Tight pec major would limit what?

What would this shoulder look like if the pec. Minor is tight?



# The Deltoid

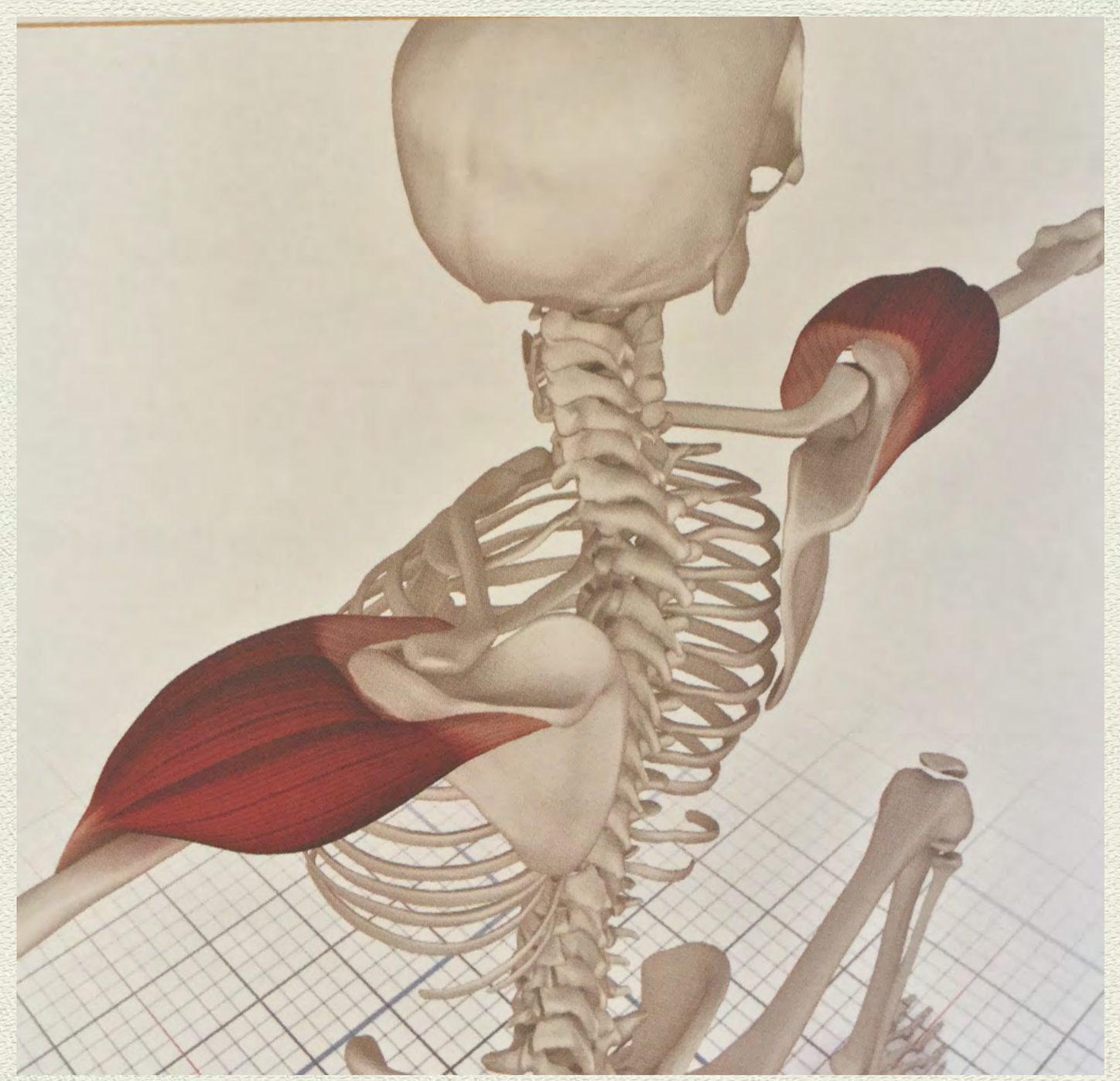
*1 muscle, 3 distinct parts*

# THE DELTOID:  1 MUSCLE, 3 DISTINCT ACTIONS

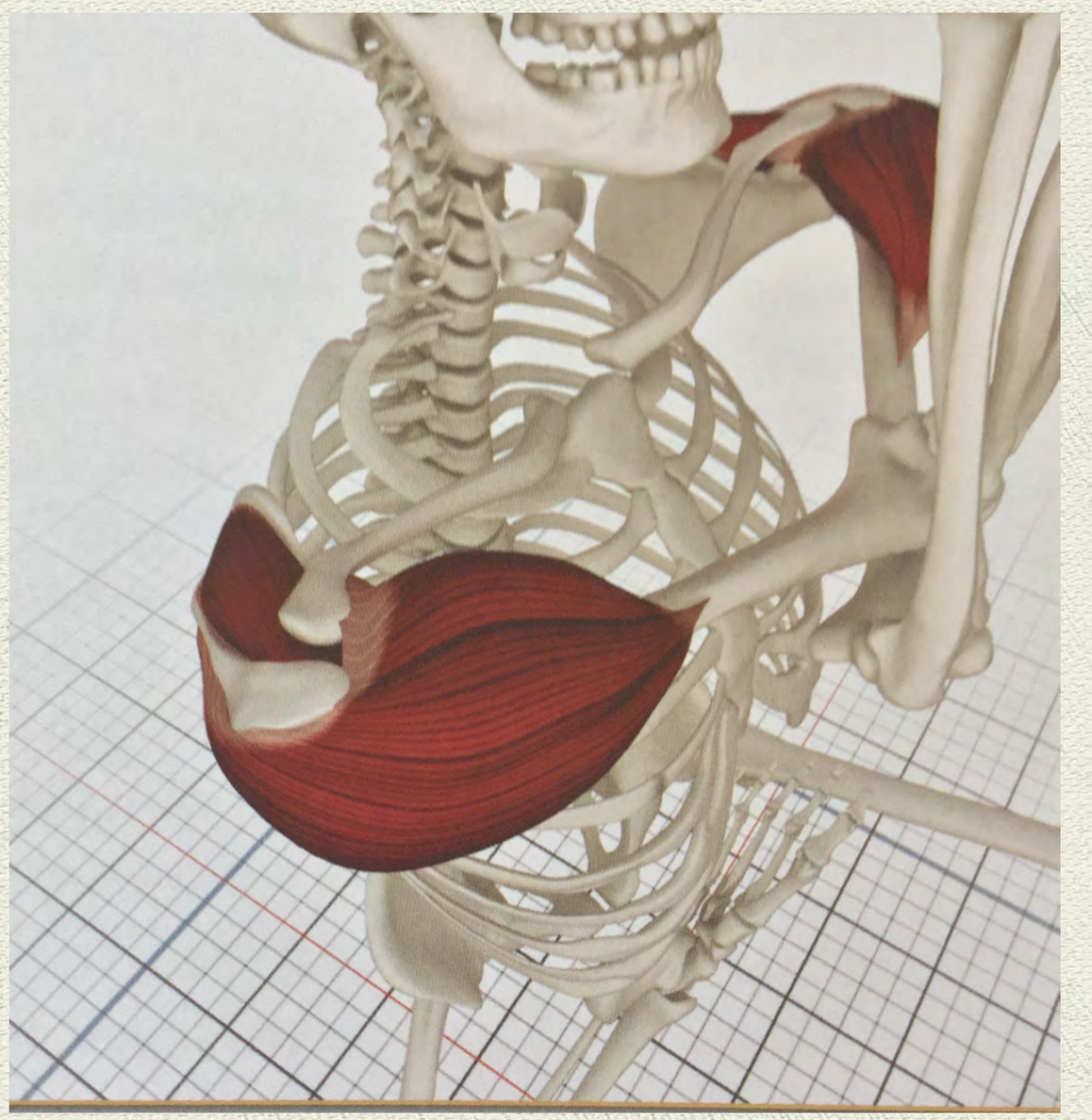
Anterior Deltoid: raises are forward (flexion)

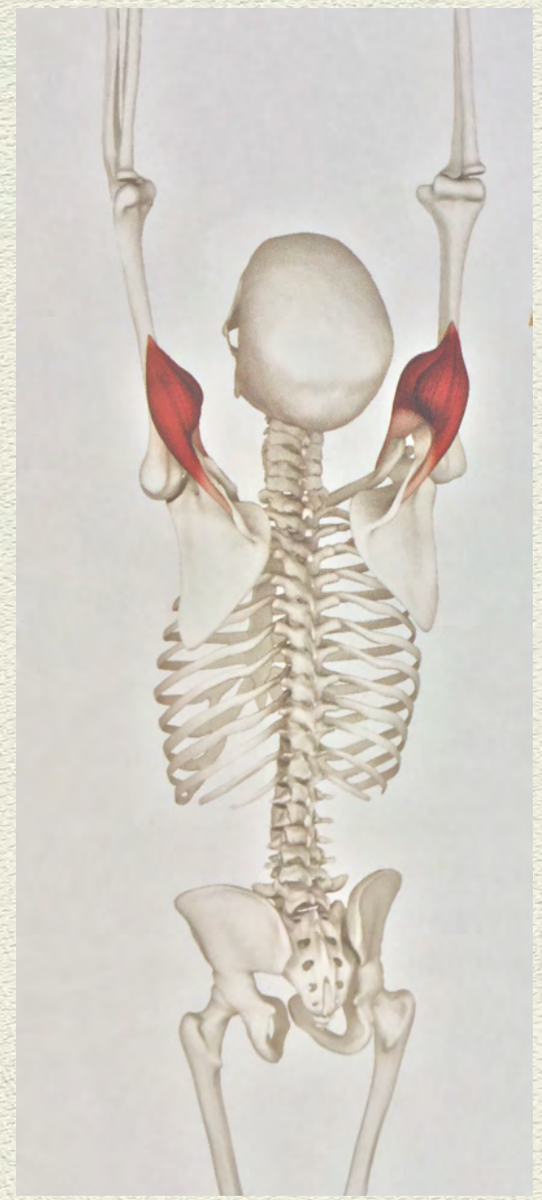
Mid Deltoid:  Raises arm to the side (ABDuction)

Posterior Deltoid: raises the arm back (extension)



Deltoids are active with nearly every arm movement in yoga. Arm balances strengthen this muscle group





# THE ELBOW

# THE ELBOW

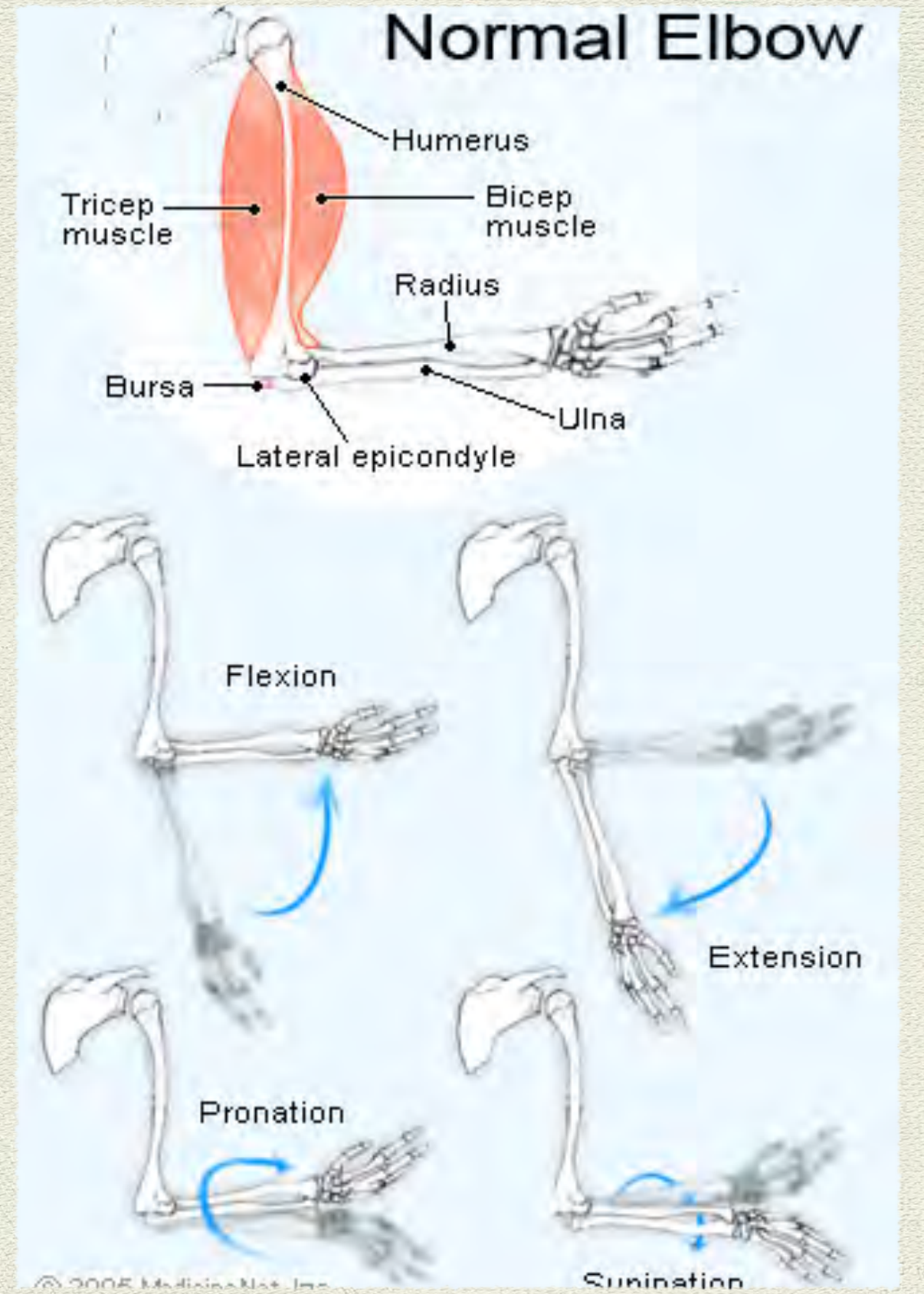
*Motions are defined by the placement of the hand*

*Flexion: hand moves forward (toward mouth)*

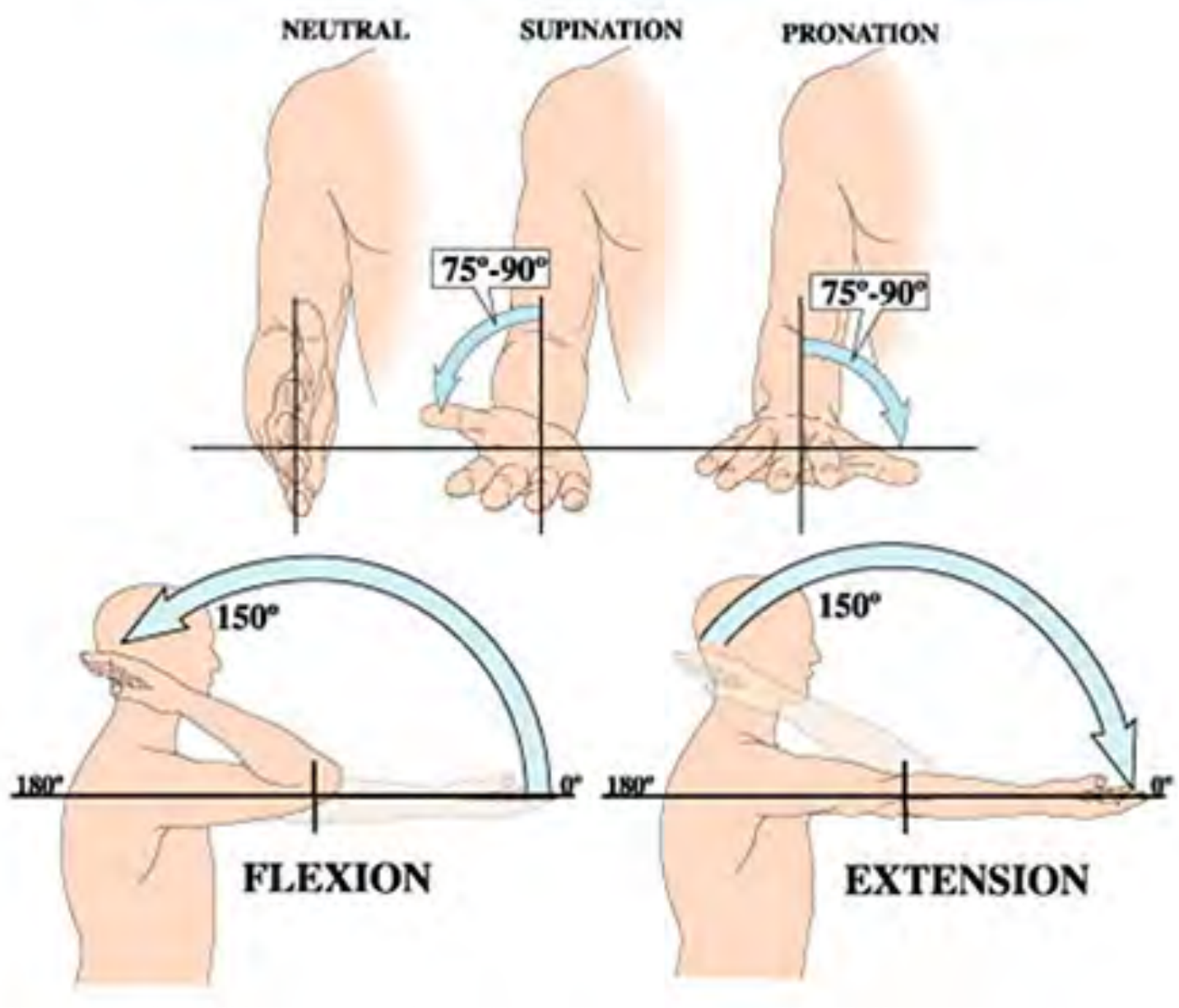
*Extension: hand moves backward (away from mouth)*

*Supination: Palm faces front body (same direction as your nose)*

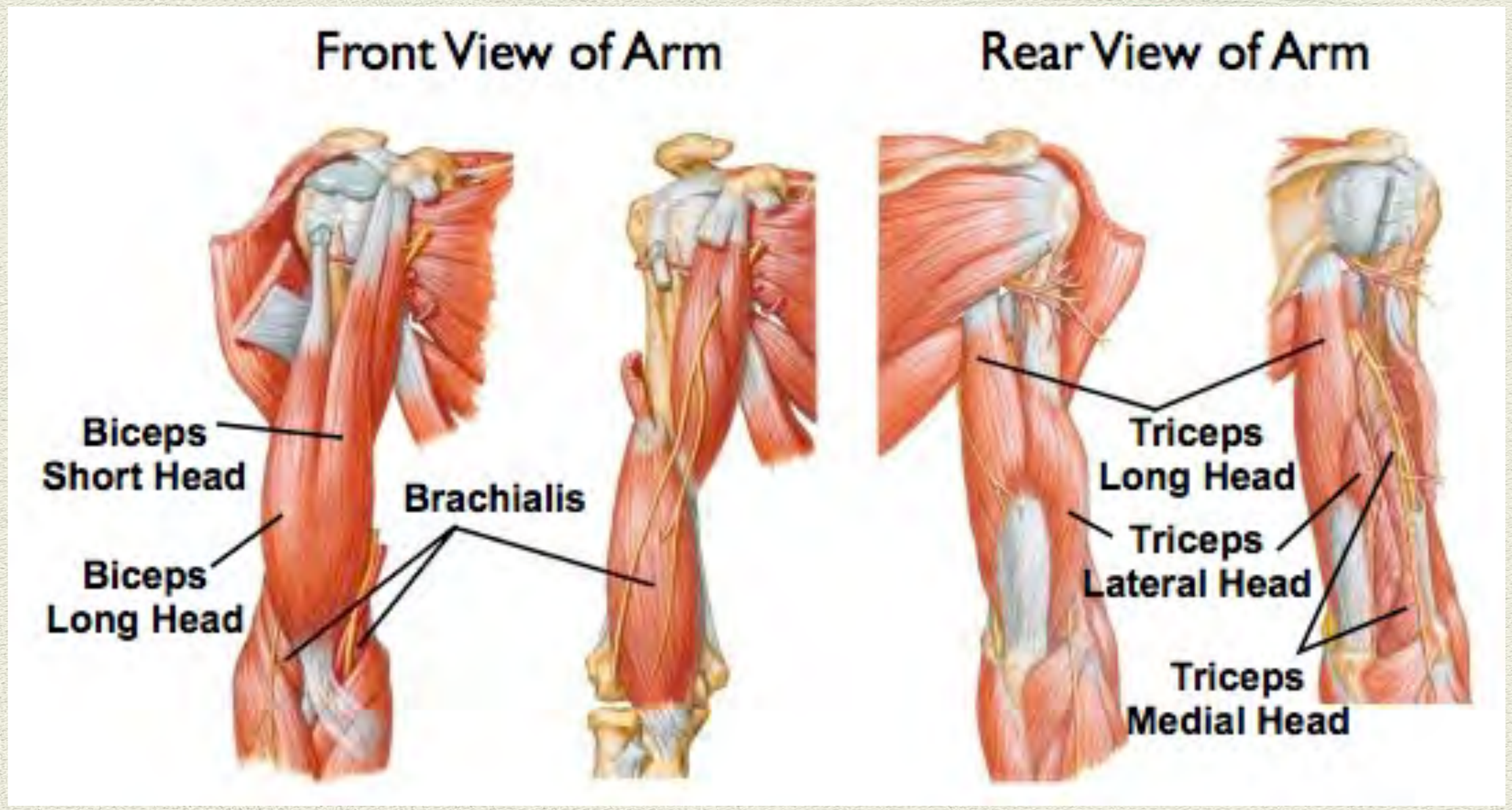
*Pronation: palm faces rear body*



# ELBOW MOVEMENT AND NORMAL RANGE OF MOTION



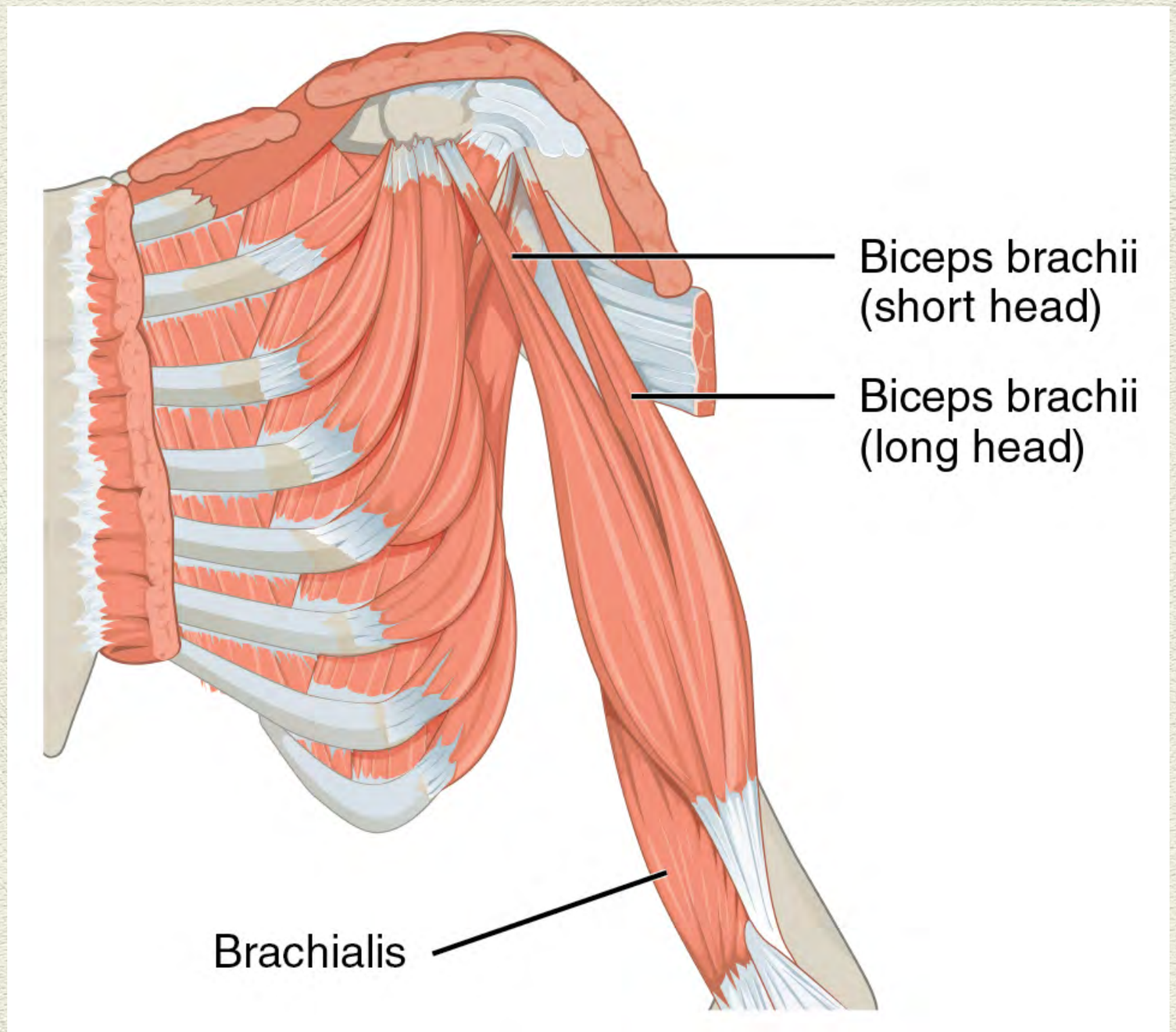
Biceps: 2 heads, front of the arm




Triceps: 3 heads, rear of the arm

# BICEPS

*SUN'S OUT, GUNS OUT*

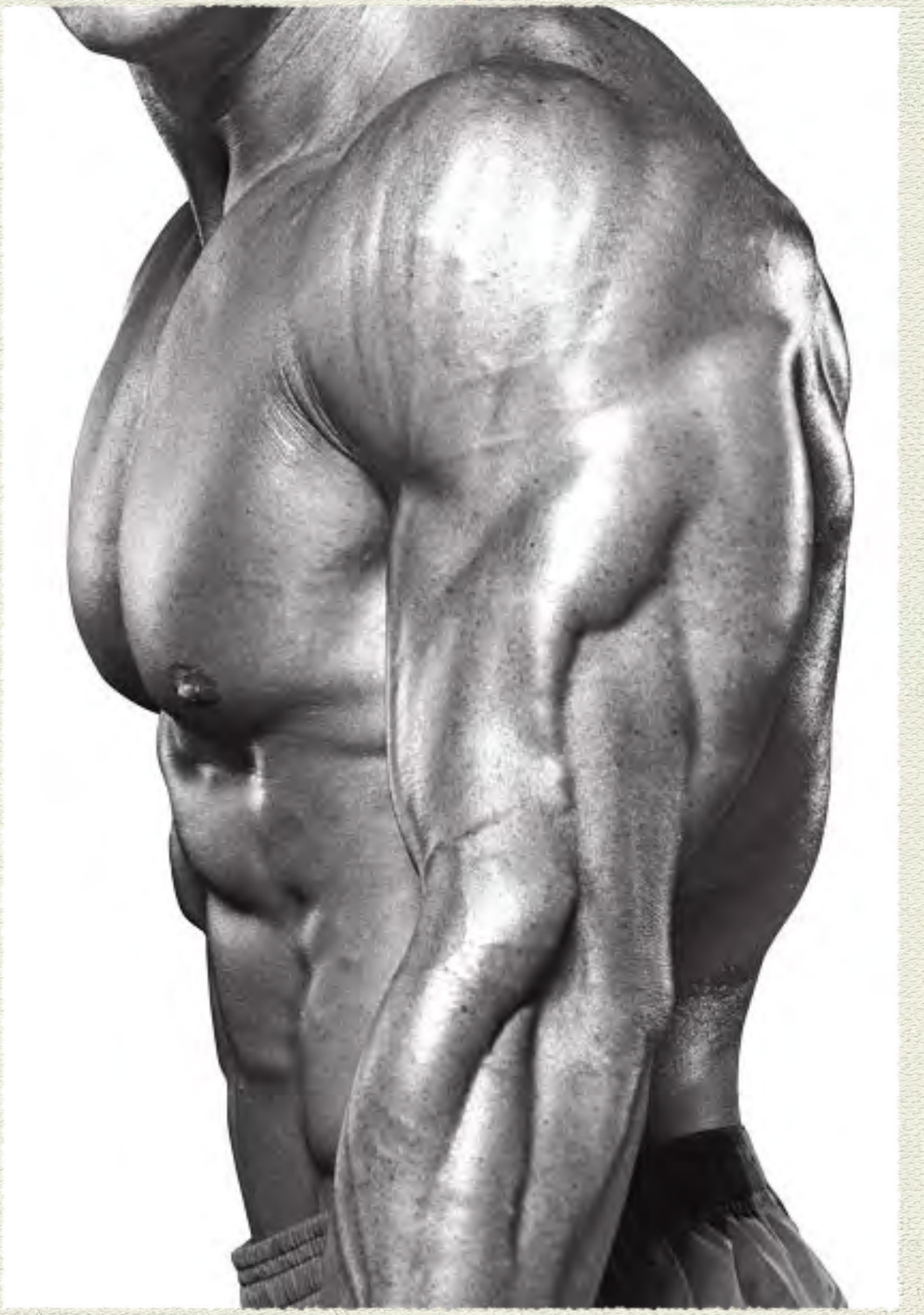



FLEXES AND SUPINATES THE HAND

Bicep flexes the elbow which in turn, lengthens the triceps
It is also our most powerful supinator (palm upward)

# Triceps

*Back of the upper arm*
*Extends the elbow*
*Major player in all arm balances and press up/lowering tasks*



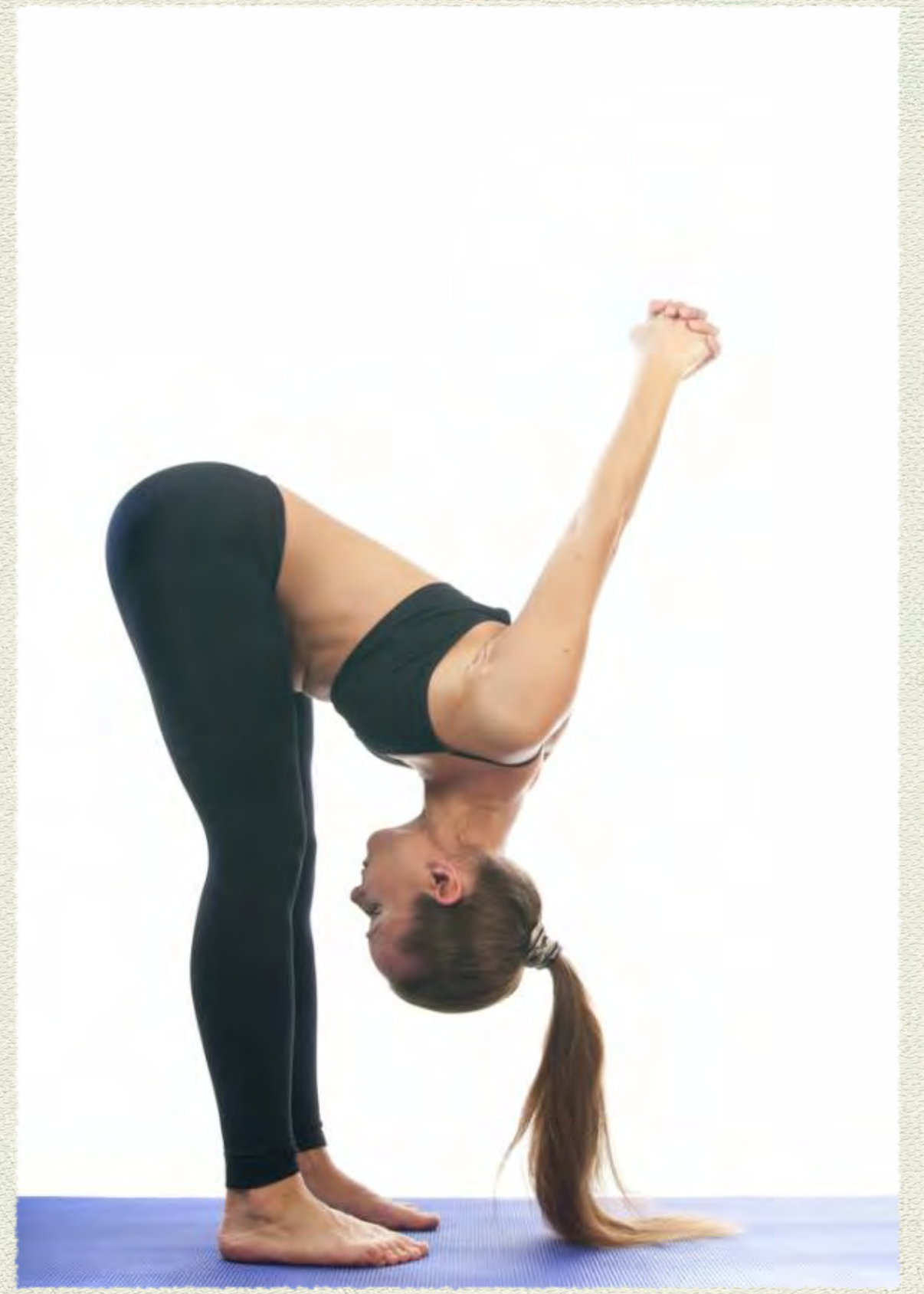
Triceps lowers the body downward in chataranga

TRICEP lifts the body upward

Triceps extends the elbow, pressing the body upward, and stretching the bicep.

# BICEPS STRETCHED

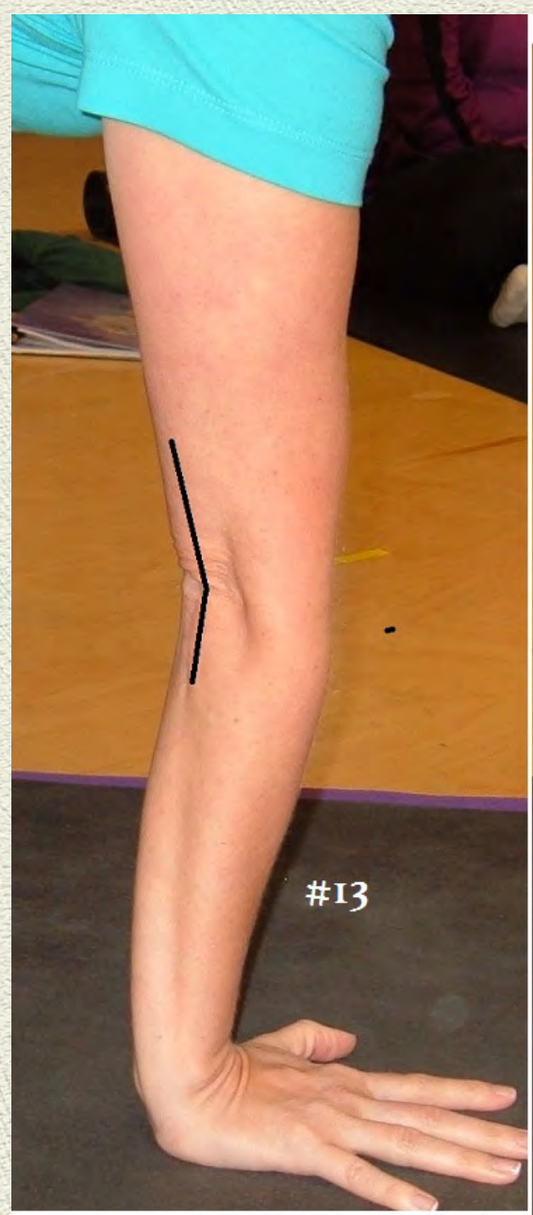
*TRICEPS CONTRACTED.*
*Tightness in the bicep prevents the elbow from "locking out"*



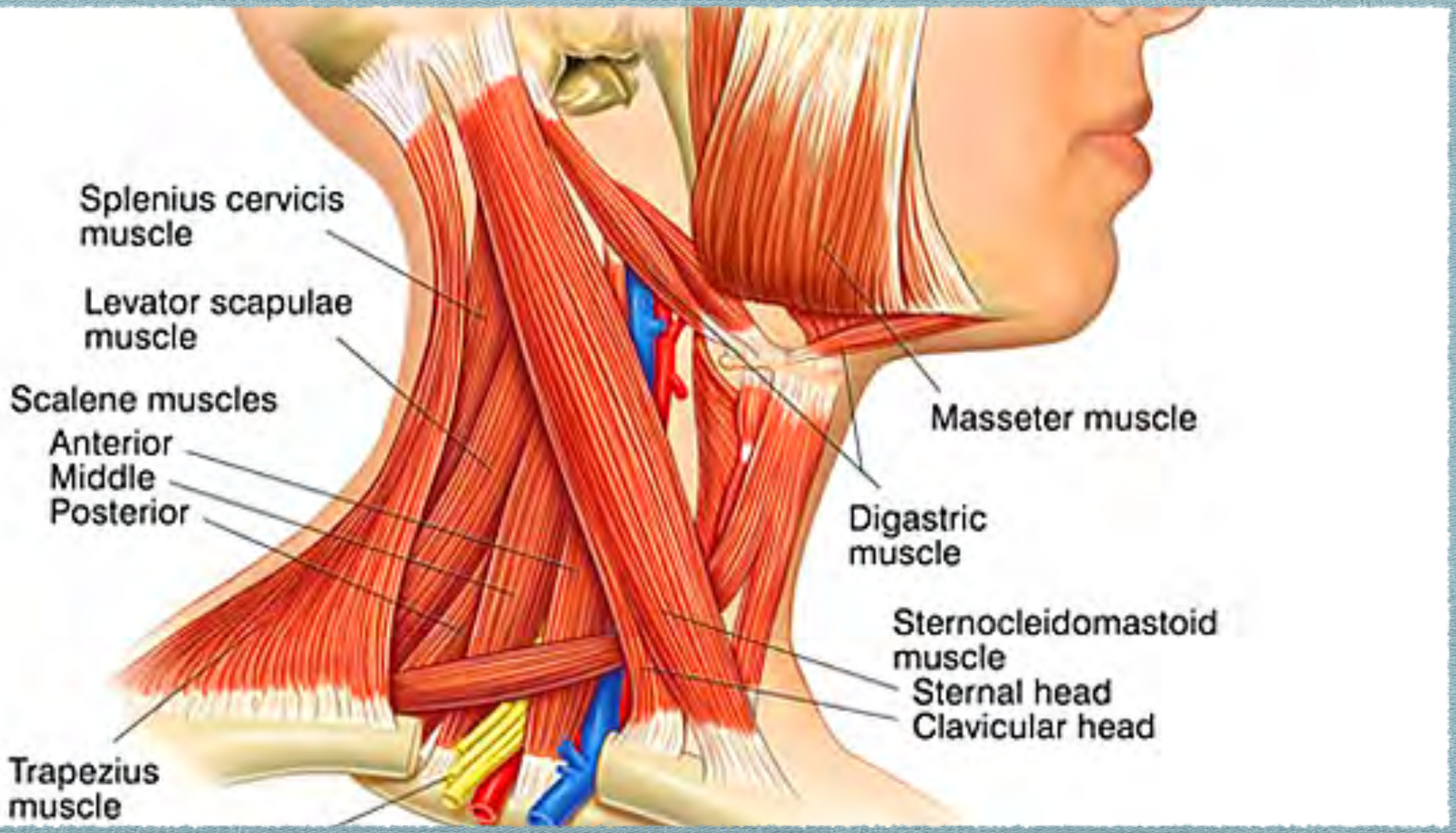
# Triceps stretched

*Biceps contracted.*
*They will always work in opposition.*

# Balance bicep and triceps controls forces at elbow to protect from hyperextension








# The Neck

*MANY muscles: we lump them together as neck flexors, neck extenders and neck lateral rotators.*

Cervical rotation (right or left): chin over shoulder

Cervical flexion: chin toward belly button
Cervical extension: chin away from belly button

# THE ANKLE AND FOOT

*Our root to the earth, and our primary base of support*

# OUR ROOTS

*STABILITY THROUGH THE ANKLE AND FOOT*

Dorsiflexion

Plantarflexion

Eversion

Inversion

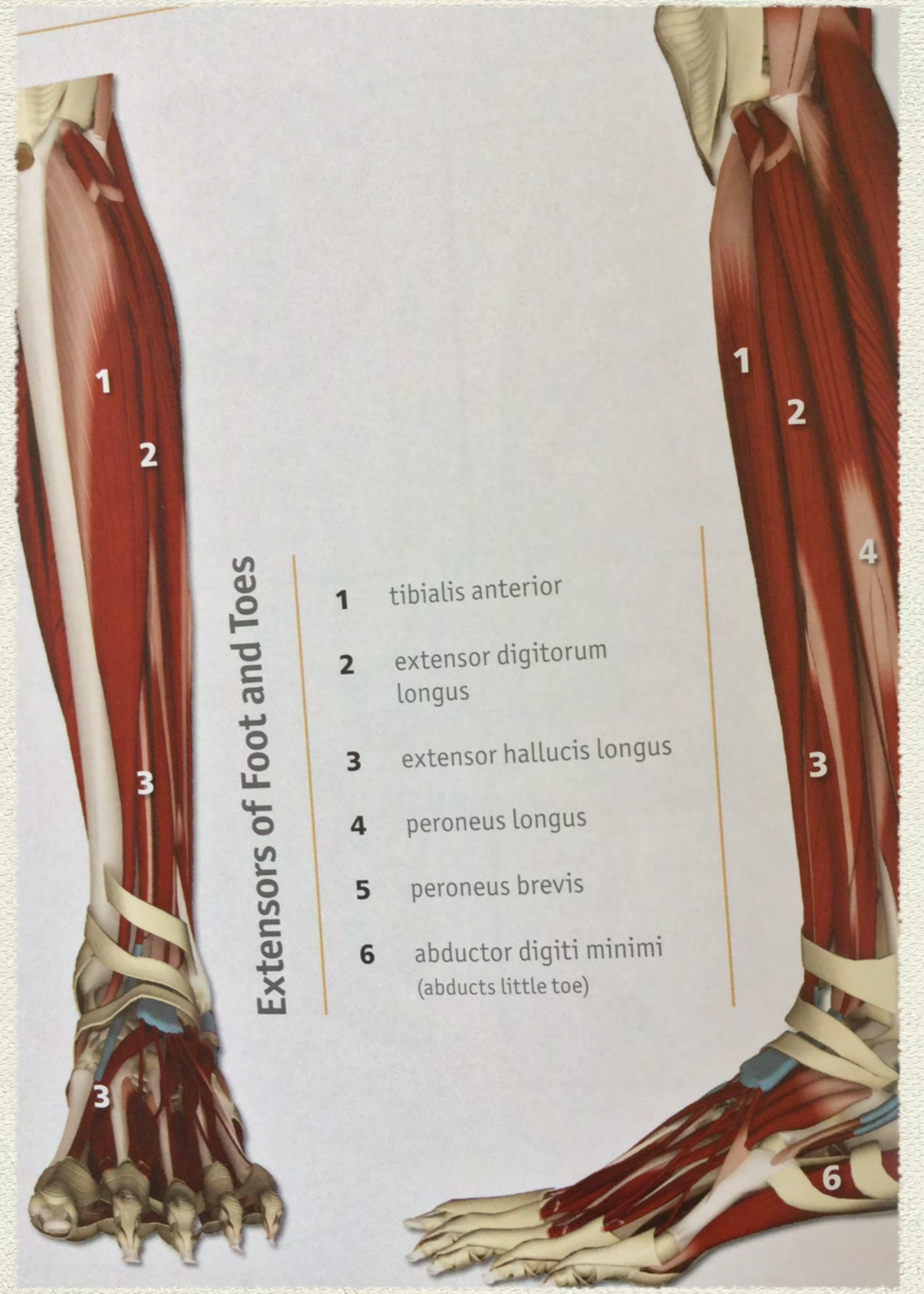
# Extensors of the foot and toes

*AKA*

*Dorsiflexor of the ankle and toe extensors*

*They lift our foot for gait and to prevent tripping/dragging of toes.*

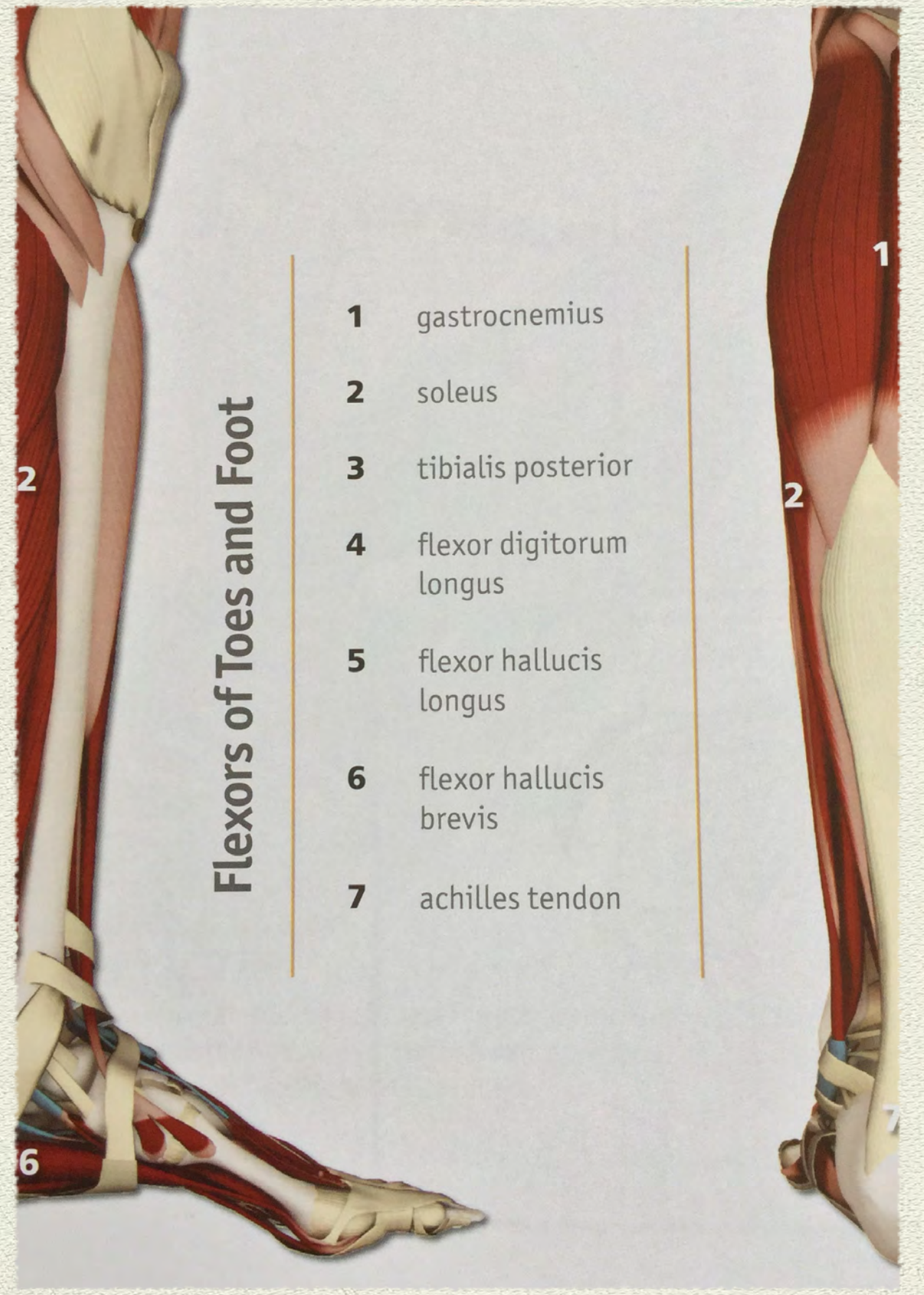
*Important for balance*



Ankle dorsiflexion

# Flexors of the ankle and toes

*AKA. Plantarflexors of the ankle and toe flexors*
*Raise us onto "tiptoes "*
*Major players in balance and transitioning poses*



Ankle plantarflexion

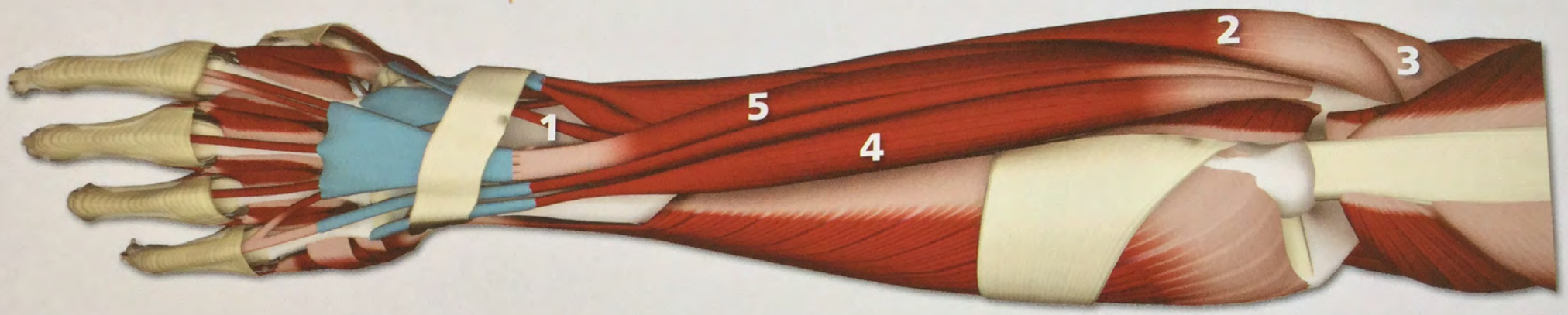
Ankle dorsiflexion

Ankle plantarflexion

Ankle supination

Drive “knife edge” of foot into floor

# The Hand




## Extensors

1 extensor pollicis longus

2 extensor carpi radialis brevis

3 extensor carpi radialis longus

4 extensor carpi ulnaris

5 extensor digitorum

## Flexors

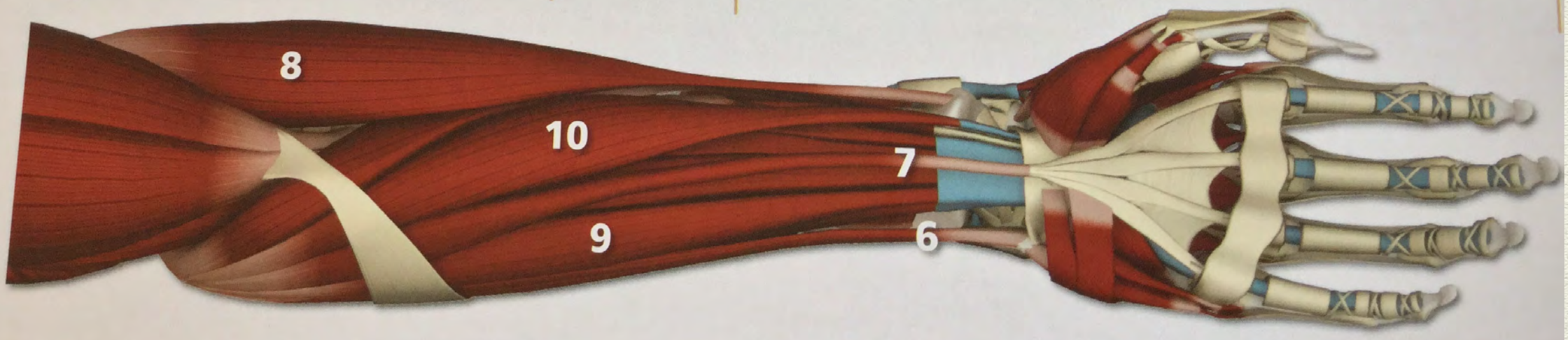
6 flexor carpi ulnaris

7 flexor digitorum profundus (deep to palmaris longus)

8 brachioradialis

9 flexor digitorum superficialis

10 flexor carpi radialis



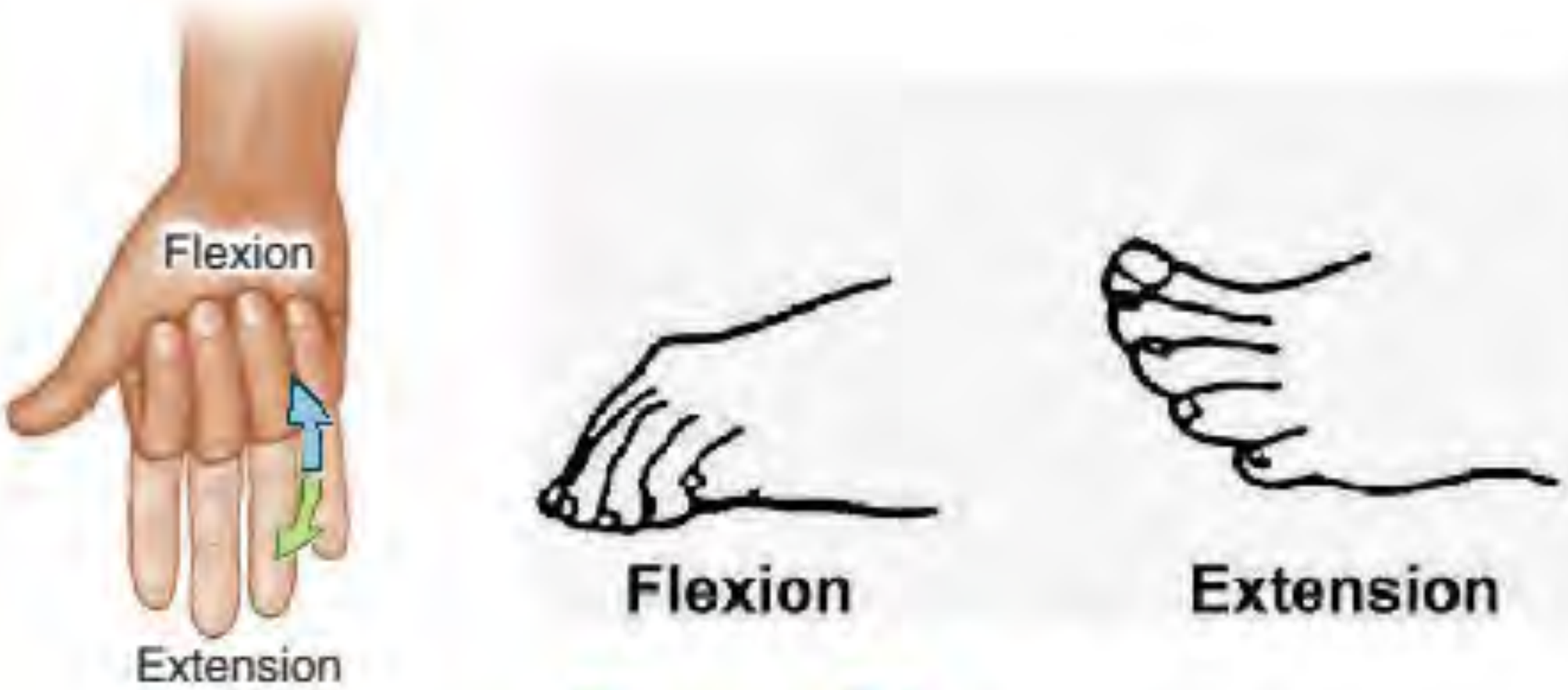


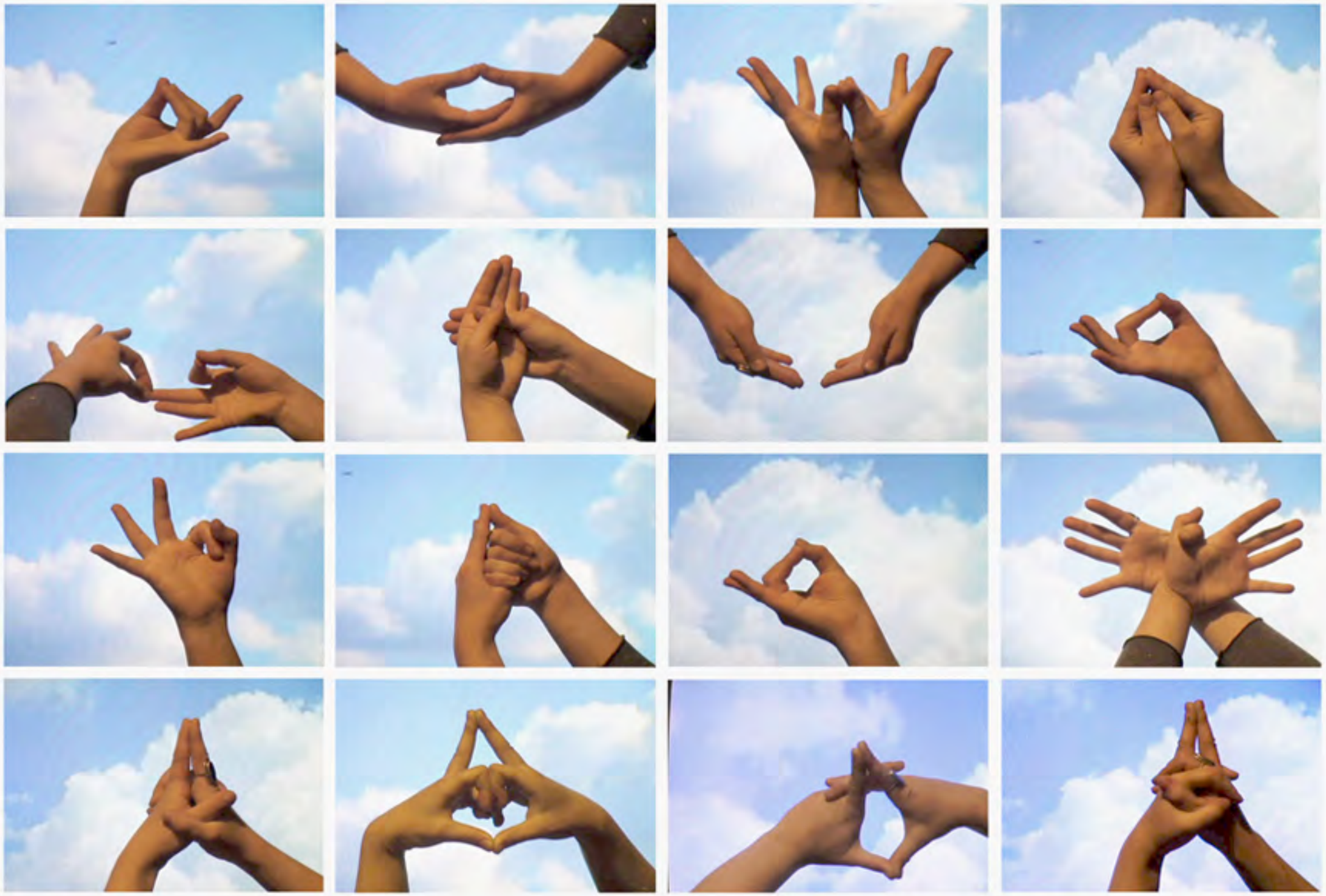

Figure 21

# Finger and toes

*Flexion "shortens" the foot or hand*

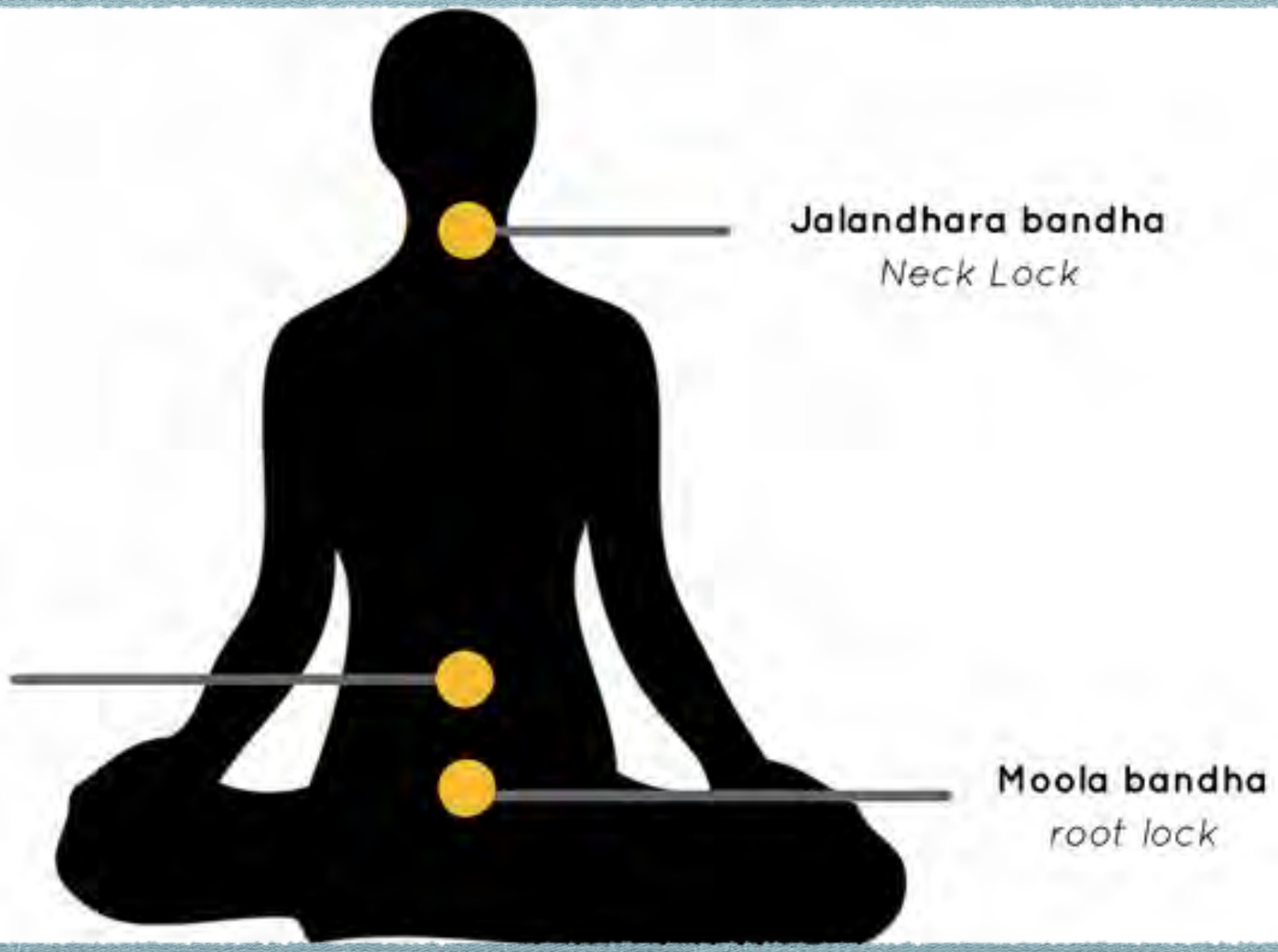
*Extension "lengthens " the foot or hand.*

# Wrist and finger motions allow for expression of mudras



# Hand balances

*Requires strength and flexibility in the wrist and hand muscles*

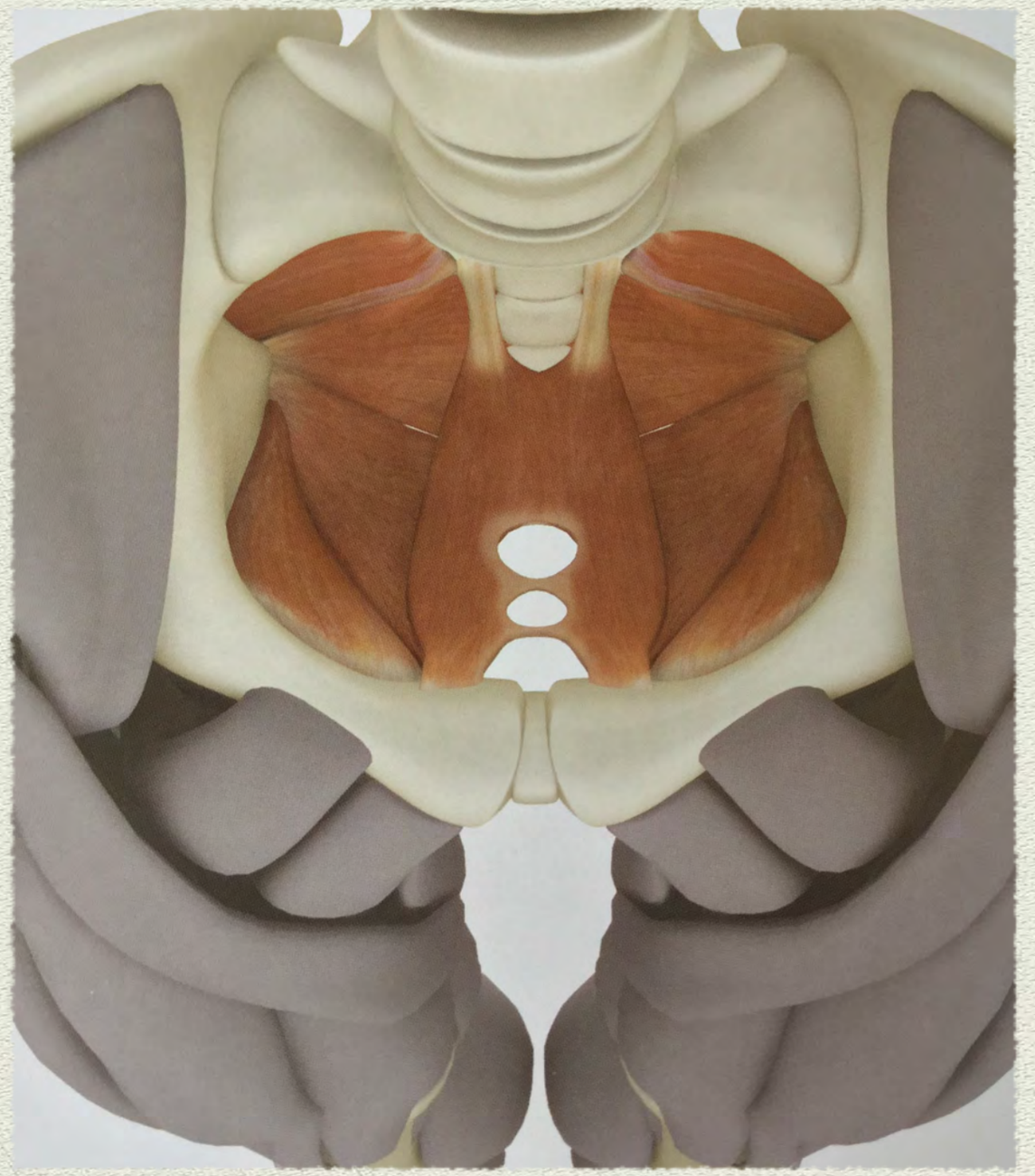



# BANDHAS

*ENERGY "LOCKS". OPPOSING MUSCLE FORCES THAT STIMULATE NERVE CONDUCTION, AND ILLUMINATE CHAKRAS*

# MULA BANDHA

- Contraction of the pelvic floor musculature.
- Associated with the first chakra (root chakra, grounding, security,  support, foundation)
- Associated with the color red
- Lifts organs, surrounds and supports genitalia, contributes to genitourinary health and function.
- Commonly weak in women following childbirth



# UDYANA BANDHA

- The “core”
- Supports the viscera
- Provides support for the spine in all postures
- Focuses the mind on the 3rd chakra (solar plexus chakra; ego, intuition, self-esteem and willpower)
- Associated with the color yellow
- Aids in digestion (fire chakra)
- Weakness can result in back pain and inability to perform arm balances

# JALANDHARA BANDHA

- Contracting the neck flexors activates this energy lock
- Focuses the mind on the 5th chakra
- The throat chakra: expression, communication and truth
- Associated with the color blue

# Put it all together

*Remember...keep it simple (at first)*

# GROW YOUR KNOWLEDGE


# There is ALOT going on inside

Our inside, dictates our outside

Neck: flexion or rotation?

Shoulder: abduction or adduction?

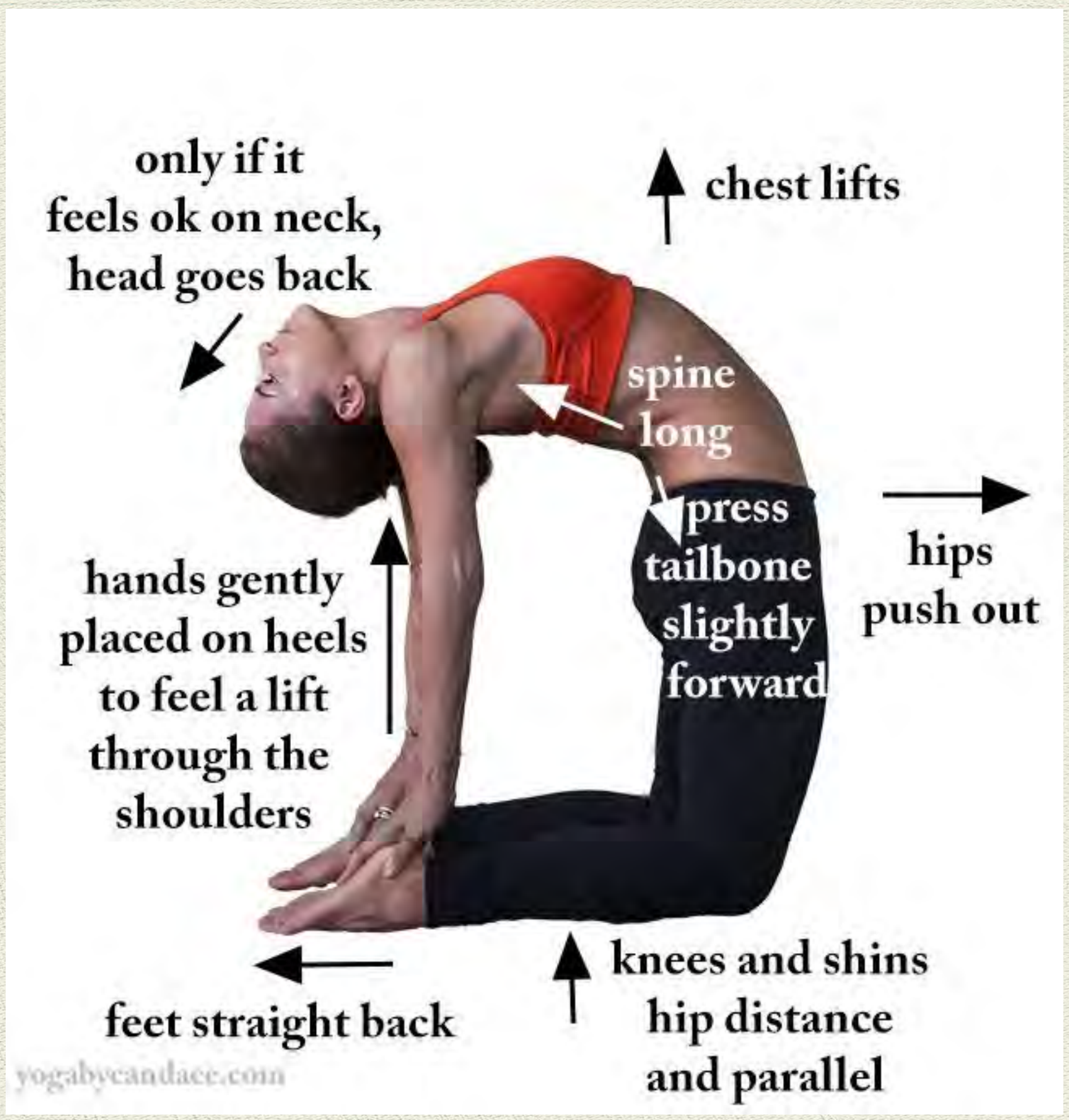
Knee: flexion or extension?


inner legs zipped
and lifted
spread toes
use strength to lift
body up rather
than collapsing
weight in hands
ankles
drawn
toward one
another
chin toward
chest for a
long neck
on ground
hands
support
low back
gaze
toward
navel
elbows
magnetized


reach up through crown of head
lengthen from pubic bone to sternum
shoulder blades
draw toward each other
thighs press down
toes spread
spine is long
feet are flexed
press through heels
pelvis tilts forward
press hands into the mat


shoulders relaxed away from ears
gaze over middle finger
fingers spread, arms engaged
shoulder blades
draw toward each other
knee over ankle
hips are even
root down into
all four corners
of feet
push into outter edge
of back foot
magnetize feet to
find a lift in pelvic floor
yogabycandace.com


engage lower abs
by bringing navel
toward spine
use core strength
to hug knee to chest
spread toes
shoulders over wrists
leg muscles
engaged
upper back
rounds
rise onto toes
push mat away
spread fingers
kneecap
lifts


only if it
feels ok on neck,
head goes back
chest lifts
spine
long
press
tailbone
slightly
forward
hips
push out
hands gently
placed on heels
to feel a lift
through the
shoulders
feet straight back
knees and shins
hip distance
and parallel
yogabycandace.com


Back is flat
look forward
legs
straight,
if possible
kneecaps
lift
shoulder blades
draw toward each other
arms strong, fingers touch ground,
fingers in line with feet
equal weight
distribution on
all four corners of feet

# The End

*Thank you*