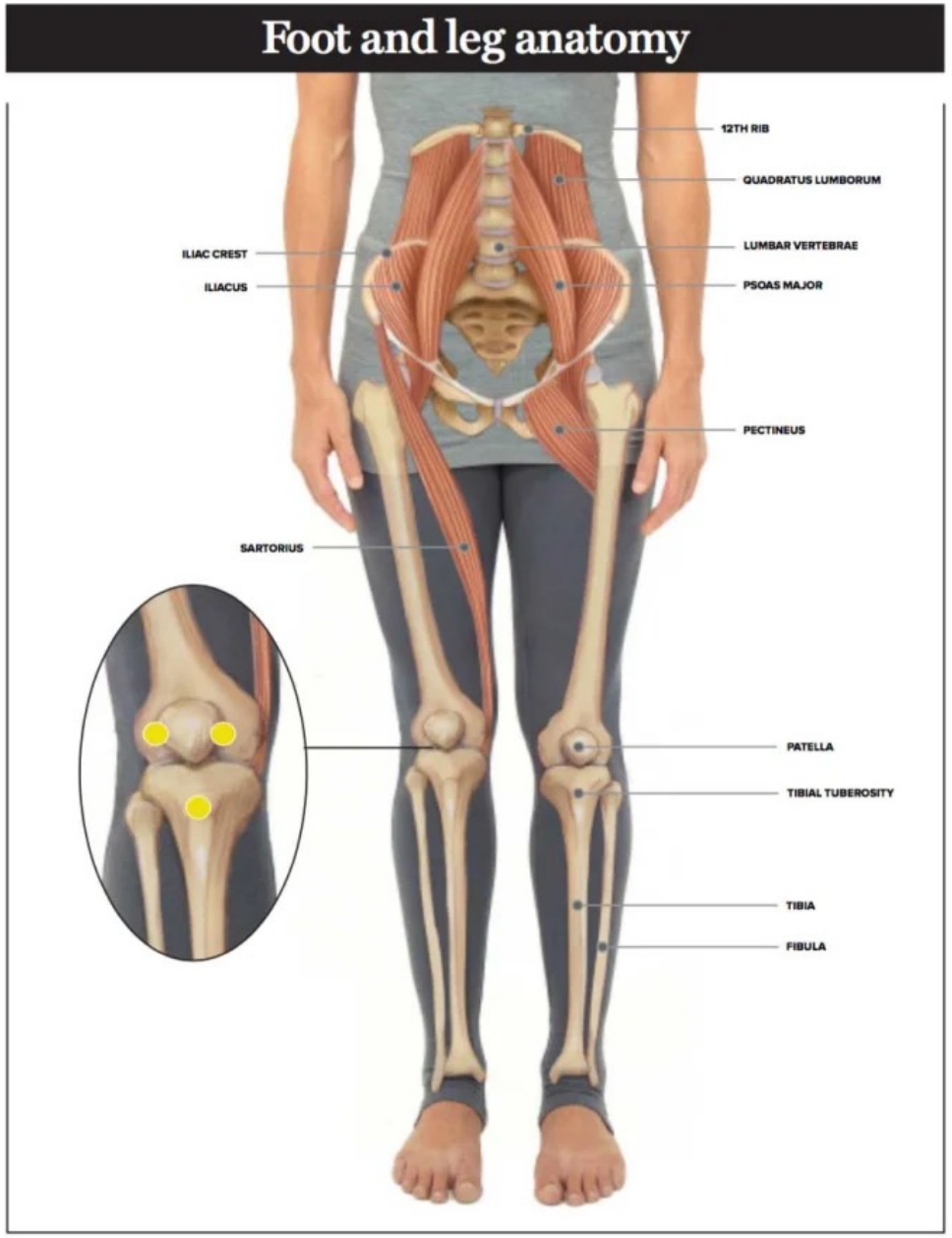
Balance and Ease

Maintaining Healthy Hips, Knees and Feet

Instructor: Monika Gold



Picture copied from Yoga Journal article by Tom Myers (October 18, 2018)

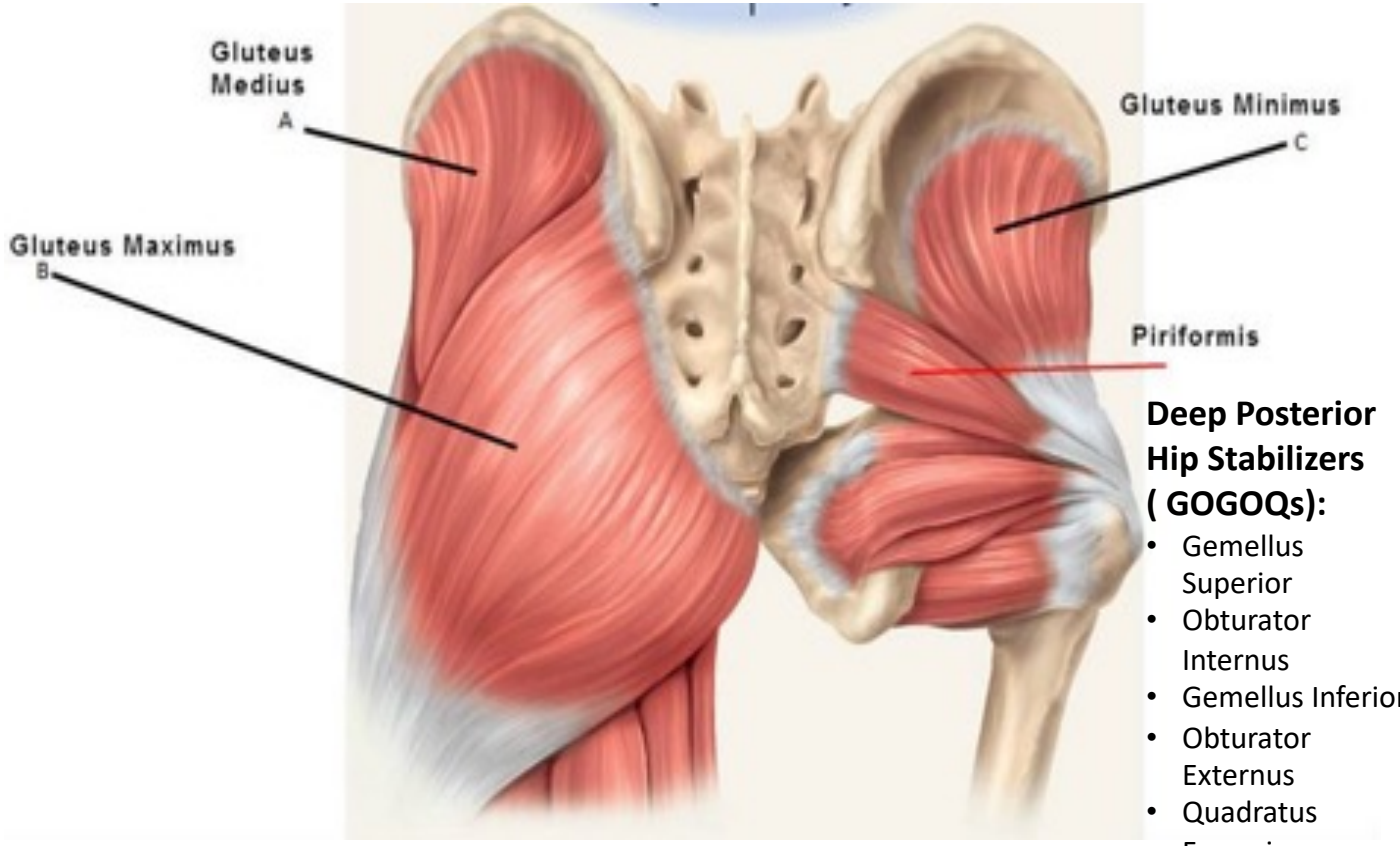
Our legs technically start from our 12th ribs, which sit beside our lumbar (lower) vertebrae. They include the psoas and quadratus lumborum muscles as well as the rest of the pelvic muscles that stabilize the hip joints.

Legs and feet are constructed as a series of hinge and bicondylar (knee) joints with a very small degree of rotation.

There is variation in femoral position in the hip socket, and our hip joints have a great deal of influence on what goes on in our knees and feet.

- Bicondylar Joint
  - Formed by two convex condyles that articulate with concave or flat surface
  - Allow movement mostly in one axis with limited rotation around a second axis
  - Knee joint

Posterior Hip Movers and Stabilizers

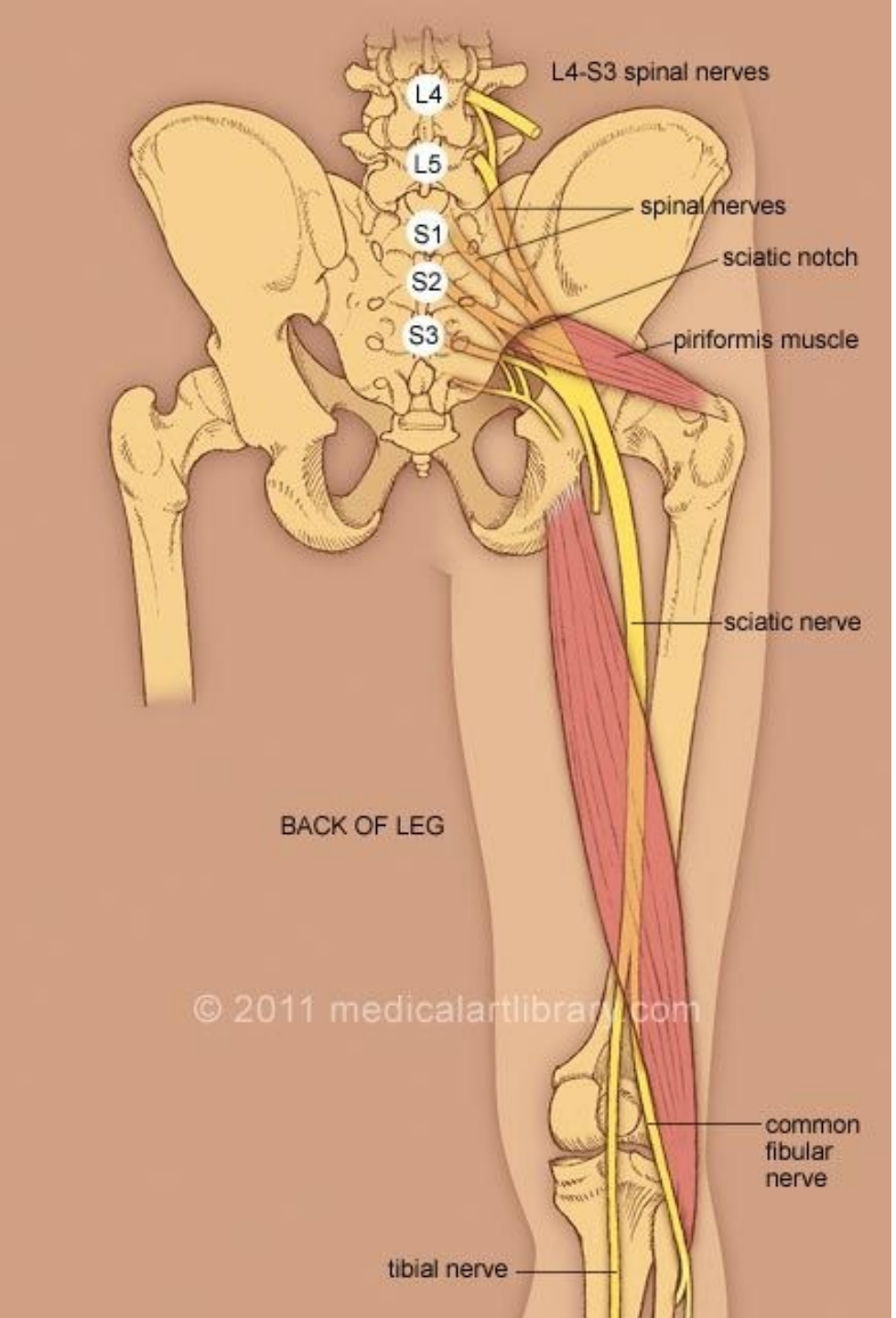


Deep Posterior Hip Stabilizers (GOGOQs):

- Gemellus Superior
- Obturator Internus
- Gemellus Inferior
- Obturator Externus
- Quadratus Femoris

- The Sacroiliac joint has a great degree of stability through ligaments and myofascial (muscles and tendons) support.
- Upper Gluteus Maximus fibers facilitate leg abduction and external rotation
- Lower Gluteus Maximus fibers facilitate primarily extension.
- The deeper posterior hip muscle group mainly stabilizes and facilitates more fine-tuned extension, abduction, adduction, lateral flexion.

Note: Studies correlate weakness in the deep hip muscles with osteo-arthritis in the hip joint.



Things to know about Your Sciatic Nerve

- Piriformis Syndrome:
- This pain originates from a tight piriformis muscle pressing on the sciatic nerve which passes by or through this muscle.

- Sciatica (Sciatic Neuritis):
- This pain originates from nerve irritation around at the vertebral outlet of the nerve branch and can radiate all the way down the back of the leg.

- **Exercise:**

- Side leg lifts w/ external rotation
- Deer Pose (90/90 Pose)

- **Release:**
- External rotation with hip flexion (i.e. Supine Pidgeon)
- Deep lunge with external rotation
- Myofascial balls on Piriformis

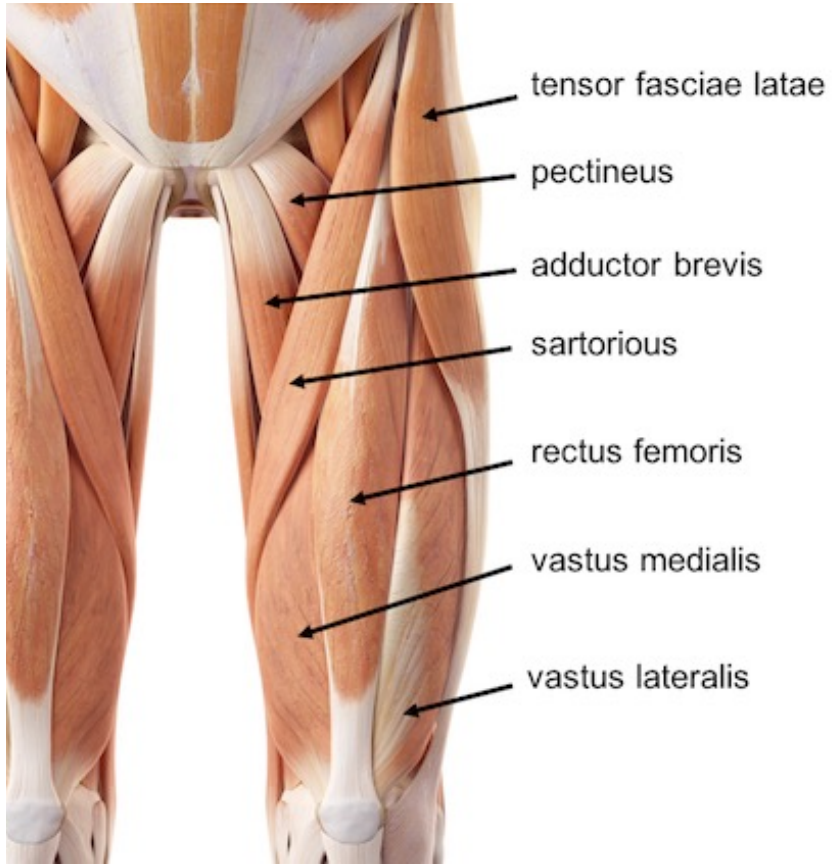
Anterior Hip Movers and Stabilizers

- Both the Gluteus Maximus and TFL transition into the Iliotibial band (ITB), which crosses the lateral side of the knee to attach to the tibia. A sheath of the ITB deep to the TFL also attaches to the lateral hip joint capsule.

- Sartorius and Rectus Femoris also cross the knee, one on the medial side and one on the op of the knee.

- Vastus lateralis and Vastus Medialis attach directly at the knee.

- Tightness or weakness in any of the above-listed muscles impacts the knee.



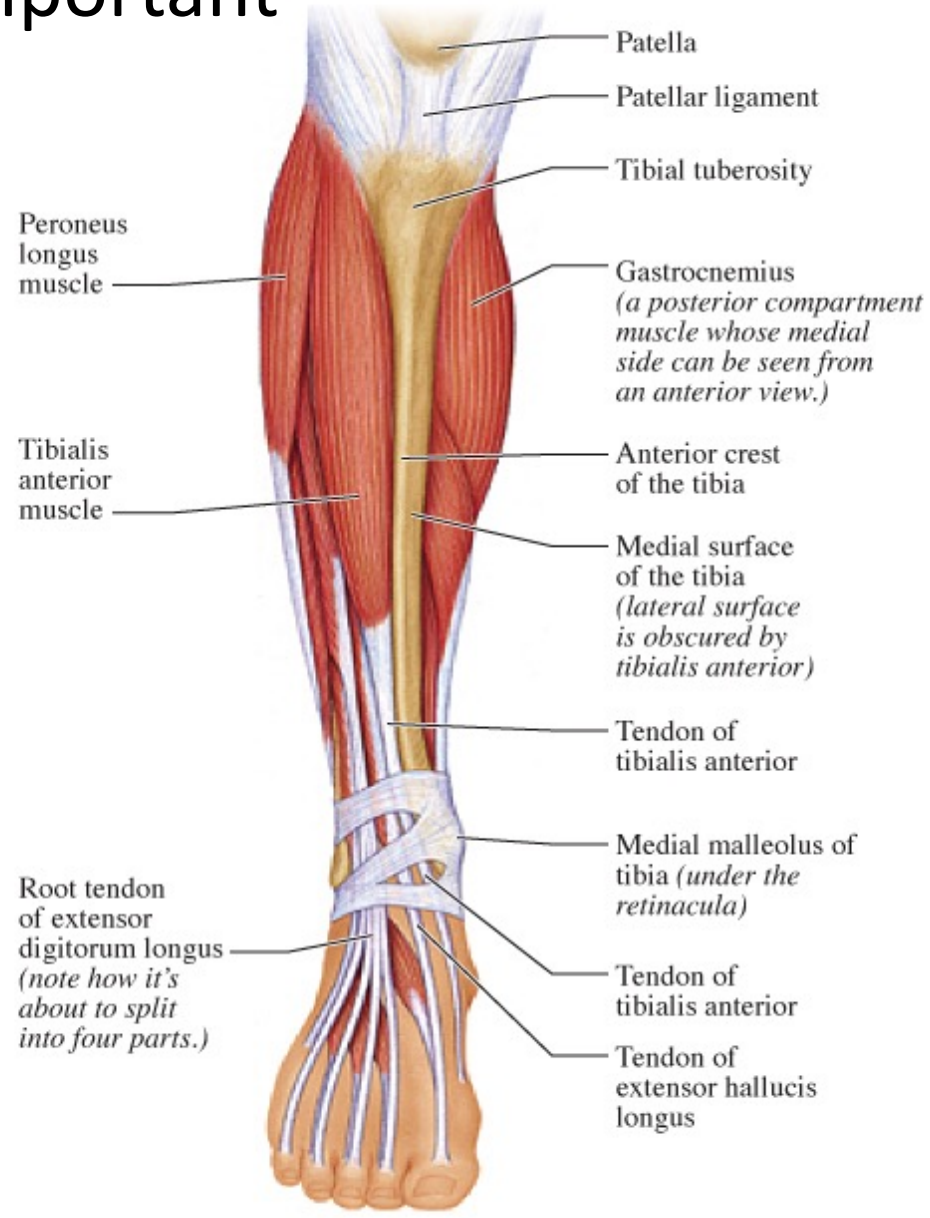
Feet Are Very Important

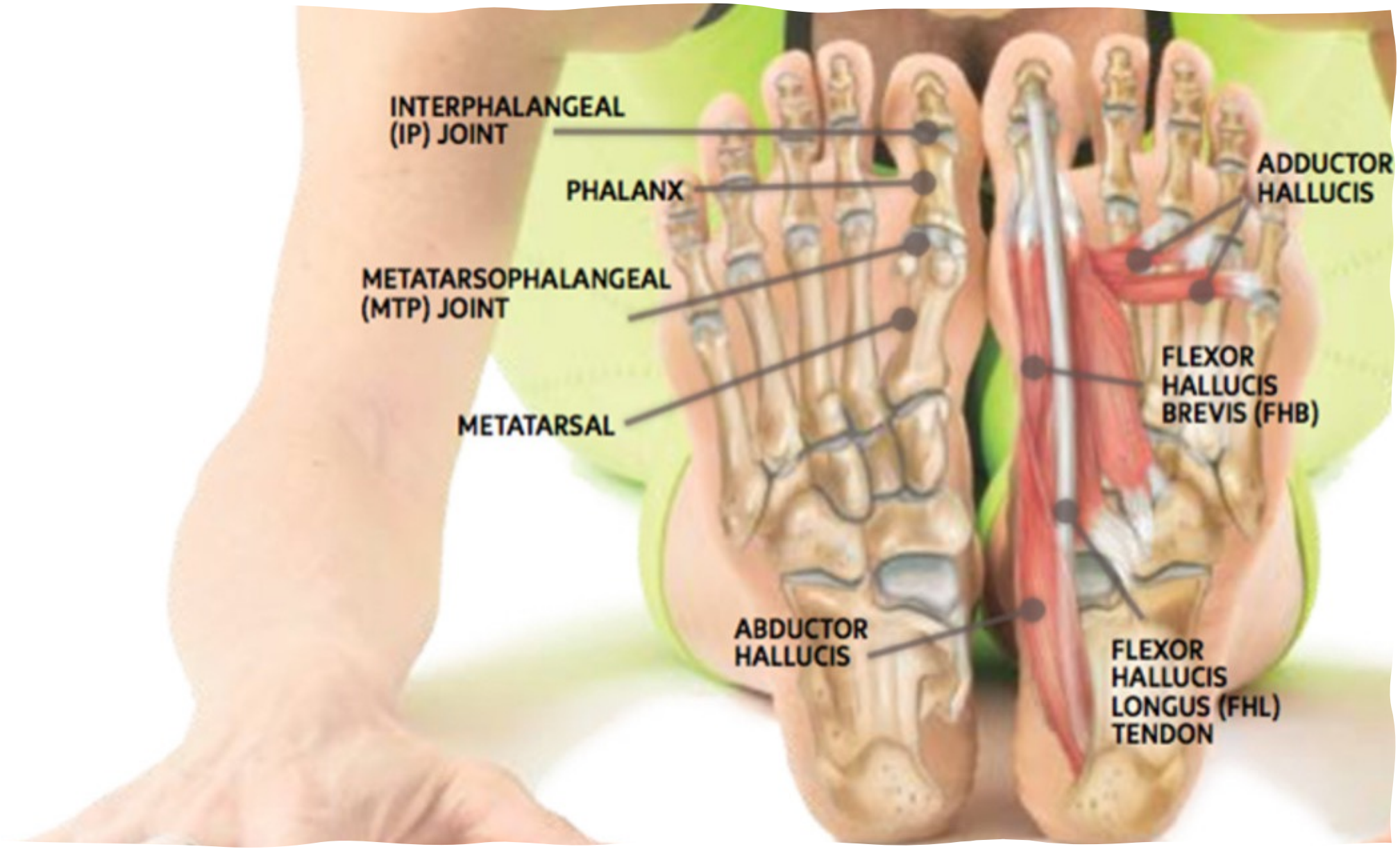
26 Bones
33 Joints
Over 100 Muscles, Tendons and Ligaments

First line of defense for postural alignment and balance

A direct sensory feedback line up the leg to knees and hips.

Example: First Metatarsals (big toes) connect directly through the adductor group to the pelvic floor and thus are crucial players in proprioception and balance




INTERPHALANGEAL (IP) JOINT
PHALANX
METATARSOPHALANGEAL (MTP) JOINT
METATARSAL
ADDUCTOR HALLUCIS
FLEXOR HALLUCIS BREVIS (FHB)
ABDUCTOR HALLUCIS
FLEXOR HALLUCIS LONGUS (FHL) TENDON

Building Stability and Resilience in our Hips and Knees

Pelvic Tilt Exercise (Understanding how this movement leads in many common activities)

- Inhale tilt hips forward (anterior pelvic tilt)
- Exhale tilt hips back (posterior pelvic tilt)

One foot on block hip strengthening exercises

High twisted Lunge to Reverse Warrior

All Fours Hip Strengtheners:

- Inhale Extend right leg back, Exhale round under, inhale extend, exhale cross right leg over left and slide back to “crouching pidgeon”, inhale extend, exhale right knee to right arm, inhale modified side plank, exhale 4-Ped
- Inhale Extend left leg back, Exhale round under, inhale extend, exhale cross left leg over right and slide back to “crouching pidgeon”, inhale extend, exhale left knee to right arm, inhale modified side plank, exhale 4-Ped

Blanket Slides Strength Work

- Hamstrings and Adductors

Hip and Upper Leg Myofascial Release

Eccentric Hip Flexor Release

- Sacrum on block, lower one leg, hug the other in; small movements with extended hovering leg, then release to floor.
- Low lunge activation to release

SI Joint Release

- Sacrum on block, legs up or up the wall
- Myofascial balls on either side of sacrum, feet hip-width, knees hip-width or together.

Piriformis Release

- Myofascial balls 1-2 inches lateral to lower sacrum

Gluteus Medius Release

- Myofascial ball just below lateral Iliac crest and towards greater trochanter of femur. Move leg to notice the muscle.

TFL Release

- Myofascial ball in “front pocket” location
- 45 degree leaning forward

Lower Leg and Foot Myofascial Strength & Release Techniques

Calf Raises and Lowers

- neutral leg position and external rotation

Releasing calf muscles and hamstrings

- Rolled up blanket or myofascial ball between hamstrings and calves

Releasing Connective Tissue Adhesions in Shin area

- Using myofascial ball and weight plate or human assistance → place ball just laterally to Tibia and weigh it down. Plantar-flex and dorsi-flex the foot to release fascial adhesions.

Supine Ankle circles

Supine Sciatic Nerve Flossing

Releasing adhesions in the sole of the foot

- Myofascial ball (blue or green) rolled between metatarsals and heel
- Hold positions
- Then scribble out

Big Toe Mobility Technique

- Blue ball under big toe with metatarsal on floor
- Push toe into ball while toe is in extension over the ball

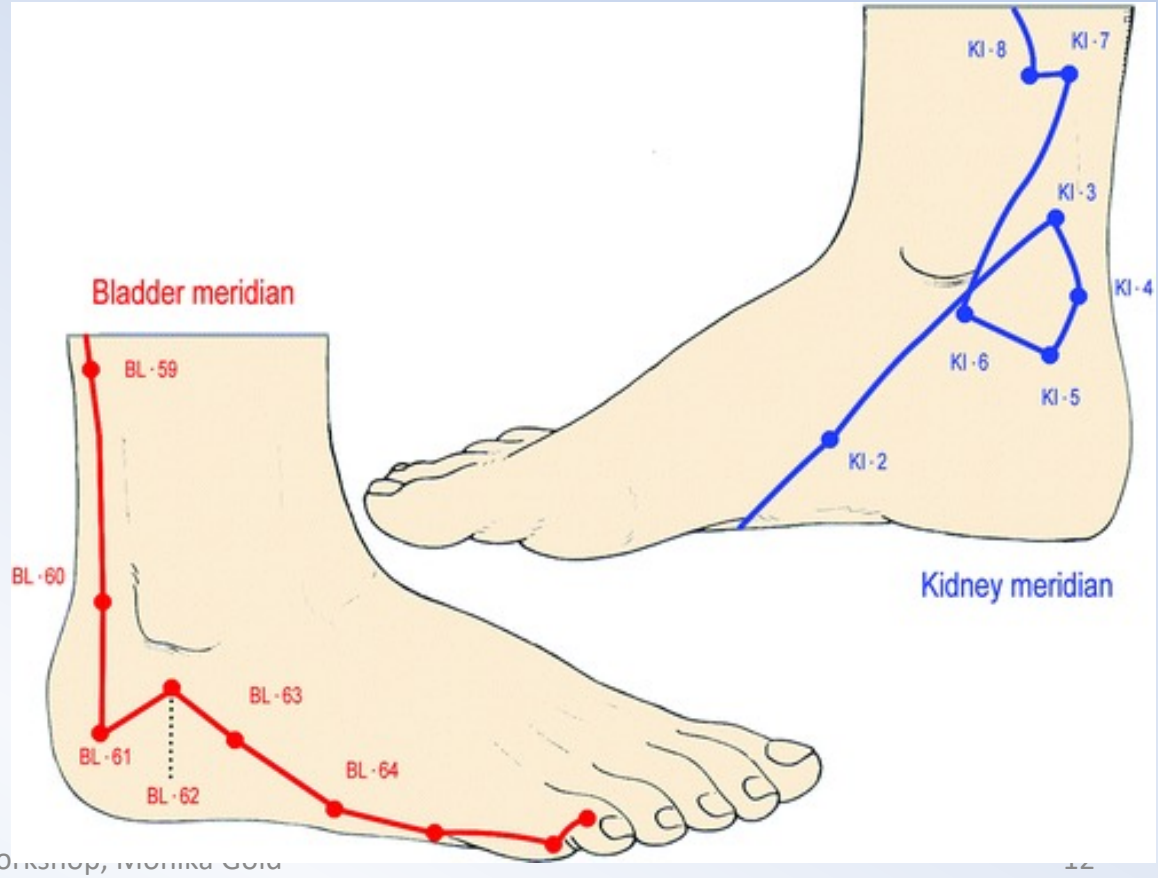
Acupressure Points on Foot and Ankle

- Kidney 1 = Gushing Spring

Acupressure is grounding, promotes calm and better sleep

- Kidney 3 = Supreme Stream

Acupressure affects knee and low back health



- Kidney 6 = Illuminated Sea
- both inner feet simultaneously while in Baddha Konasana (Butterfly Pose) helps with swelling and pain
- Kidney 3 and Bladder 60 pressed simultaneously: index finger and thumb press on either side of Achilles tendon just above the heel. This helps knees and feet.

Acupressure Points on Legs

Spleen 6 = 3 Yin Intersection (Spleen, Liver, Kidney)
4 finger widths above highest point of medial malleolus (inner ankle bone)
A very important acupressure and acupuncture point as it affects the Spleen, Liver and kidney meridians simultaneously. Sit in Baddha Konasana and massage both legs at the same time.

Stomach 36 = Leg Three Mile
Run with fingers or thumbs
Nourishes and Energizes the body, try it out when tired and in need of a little energy boost