

Applied Anatomy, Posture and Alignment

Presentation by Jamie Elmer June 16, 17 and 18 at Easton Yoga

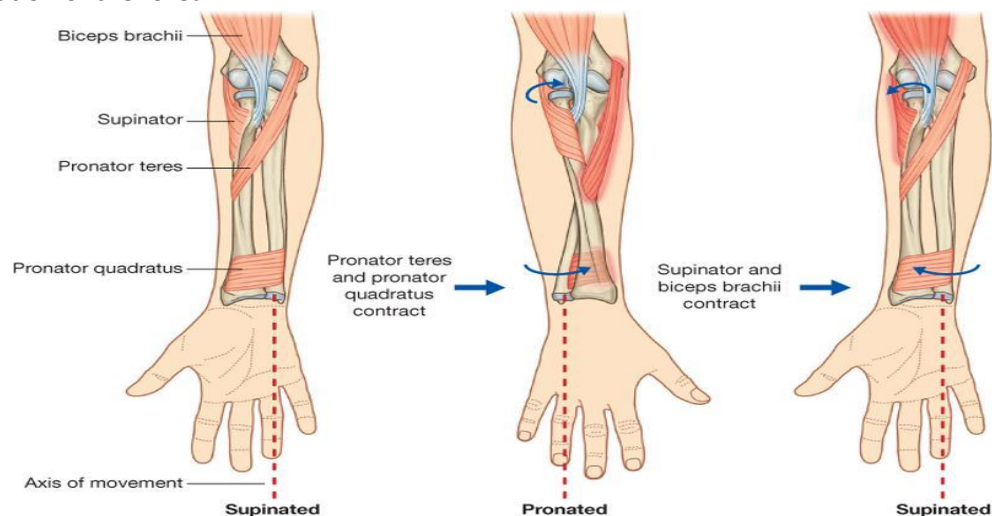
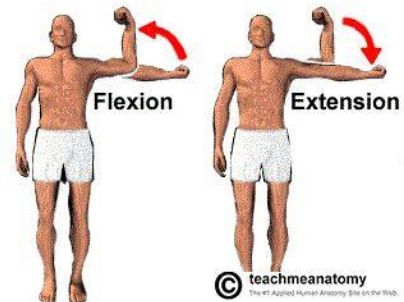
Synopsis

Over the course of three 1 ½ hour sessions, we became familiar with movement and anatomy terms. We went over all the types of movements performed by muscles. We looked at all the muscle systems in the lower body, the arms and shoulders in [The Muscle Book by Paul Blakey](#).

A specific conclusion was that many of us “sit in our joints.” That means that we often rely on the joint to provide stability which would better be provided by muscle. We would all do well to engage muscles rather than “sit in the joint” both in our everyday posture and in our yoga asanas.

Movement terms

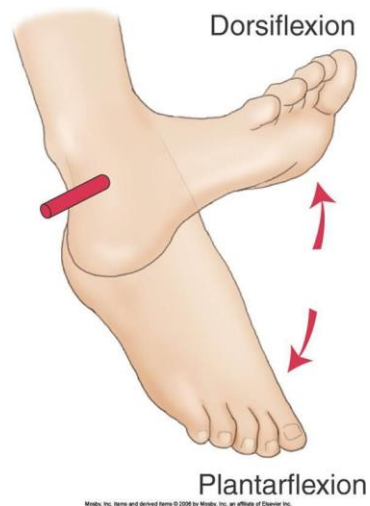
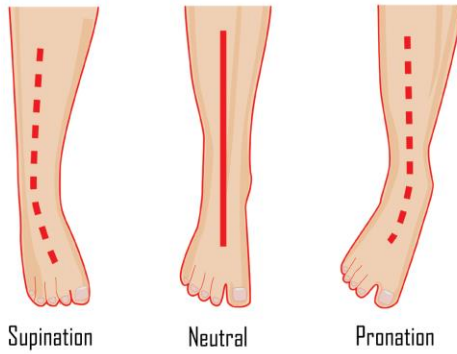
- Flexion of a muscle – muscle folding in or curling in
- Extension of a muscle – unfolding of muscle
- Joint Flexion – bone joint allows folding
- Joint Extension – bone joint allows unfolding
- Anterior Tilt of the Pelvis (cow tilt)
- Posterior Tilt of the Pelvis (cat tilt)
- Neutral Pelvis
- Lateral Flexion - bending the torso sideways
- Abduction – drawing away from the body – lift left leg up and left
- Adduction drawing toward or across the body – lift left leg up and right
- Internal Rotation – movement toward the center of the body
- External Rotation – movement away from the center of the body
- Anterior – to the front
- Posterior – to the rear
- Pronation of the forearm
- Supination of the forearm



Drake: Gray's Anatomy for Students, 2nd Edition.
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Feet

- Plantar Flexion – pointing the foot
- Dorsiflexion – flexing out the heel of the foot
- Pronation – ankle rolls in
- Supination – foot rolls out to side of arch



Anatomy Terms

- Muscles
 - Elastic fibers that connect the bones
 - Produce movement and force
 - Each muscle has a point of origin and a point of insertion
- Ligaments
 - Attach bone to bone
 - connective tissue
 - not much blood
 - not elastic
 - don't heal themselves
- Tendon
 - Each muscle has at least two
 - Fibrous connective tissue
 - connect to muscle to bone
 - more blood than ligaments
 - sprain is an overstretched tendon
- Joint Terms
 - Joint Capsule – where bones fit together
 - Synovial Fluid – lubricates the joint, brought into joint with movement
 - Synovial Membrane – connective tissue that secretes fluid to lubricate the joints
 - Double Jointed – a joint that has more elasticity than average

Muscles, Their Actions and The Poses

Goal is to engage the muscles, but if it hurts, don't do it.

Cue to engage muscles:

Lift all 10 toes, bring down

Press back of tops of calves forward

Questions to ask your students before you adjust them:

- Are you feeling the stretch?
- Where are you feeling the stretch?
- Does it feel ok to do more?

Hip – where crease occurs

Extension – mountain, backbend, standing poses

Flexion – bent, forward fold, chair

Do at least one hip flexor stretch before forward fold

Like knee to chest, one leg straight or a low lunge

external rotation – heels toward each other

side standing poses where front leg is in external rotation

internal rotation – pigeon toes – wide leg forward fold

abductor – stand lift leg out

poses: tree, cobblers, front leg triangle, half moon, side angle, compass, goddess

adductor – stand leg sweep across body

poses: eagle

Spinal Flexion

Poses: child's, cat, crow

Spinal extension

Back bend

Spinal lateral flexion

Side bends, crescent moon, gate

Shoulder flexion

Arms extended forward or up

Poses: down dog, wheel, dancer, reverse table

Shoulder extension

Back behind the body

Arms

Abduction - W2, triangle

Adduction – give yourself a hug eagle arms

External rotation – mountain with palms forward

Elbows

Flex, extend, rotation

Fingers

Flex, extend

Hamstring

Sits bones are origin or hamstrings

Engaged when you are on your feet, mostly

Quadriceps

Pelvis

When neutral, transverse abs work

Neutral, not fore or back from spine, not a cat tilt

Do not cue to square pelvis

Position feet and legs, let pelvis follow

Goal is for legs to work harder

Sartorius –

Hip flexors, external rotator

Used in forward fold, leg lift, W2 front leg

Strengthen with goddess and W2

Transverse

Work when thigh bone works independent of pelvis

In standing poses, legs must work which frees and lengthens pelvis and lower back

Quads Stretch

When hips are in extension

Poses: camel and back bends like box and wheel

Adductors

Inner thighs

Use when drawing legs to midline, scissoring legs, lunge

Gracilis - Groin

Compass pose works this, if too tight, bring feet closer and bend knees less

Glutes

Supports lower back

External rotator of hips

Stretches by flexing hips

Used in all standing poses

Abduct the hip with a side kick

When not engaged, you "sit in your hips"

Stretch with leg across with straps

Web site recommendations:

Walk yourself well by Sherry Brouman

Every day body Mechanics

Books

Anatomy Trains by Thomas Myers

Ray Long

Yoga Teachers to follow

Judith Lasater – the 390 essential Yoga Poses

Donna Farhee

Douglas Keller

Gayord Fierstein, the Yoga Tradition and Indian Philosophy