Evaluation of the Foot And Toes
Remember the questions from lecture #2?
Remember what to look for from lecture #2?

Some unique things to look at with the foot
OBSERVATION

- Foot Type
- Toe Postures
- Calluses and Blisters
- Corns
- Toenails
Foot type is related to medial arch height.

Why do we have arches?
What happens when arches aren’t “normal?”
Pes Planus vs. Pes Cavus
Pes Planus

- Flat feet
- Rigid (structural) or Flexible (supple)
- Pronated Foot
  - Calcaneous everted (rearfoot valgus)
  - Medial bulge present
  - Navicular is low
  - Forefoot varus
- Consequences?
Pes Cavus

- High Arches
- Supinated Foot
  - Calcaneous inverted (rearfoot varus)
  - Navicular is high
  - Forefoot valgus
- Consequences?
Arch Height
Claw Toes  Hammer Toes  Morton's Toes  Hallux Abducto Valgus

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PALPATION

- Let's break the body up into 4 areas
  - Medial
  - Lateral
  - Dorsal
  - Plantar

- Use Bony Landmarks to Identify Structures
- Start from toes and work proximally
MEDIAL

- First Metatarsal
  - First MTP Joint
- First Cuneiform
- Navicular
- Talar Head
- Sustenaculum Tali
  - Spring Ligament
- Calcaneous
  - Tom, Dick, & VAN Halen
LATERAL

- 5th Metatarsal
  - 5th MTP Joint
- Styloid Process
- Cuboid
- Lateral Border - Calcaneous
  - Peroneal Tendons
DORSAL

- Metatarsal Heads
  - Ext Hallicus Longus
  - Ext Digitorum Longus
- Rays
- Cuneiforms
  - Tibialis Anterior
- Navicular
- Dome of Talus
  - Inf Ext Retinaculum
  - Dorsal Pedis Artery
- Sinus Tarsi
  - Extensor Digitorum Brevis
PLANTAR

- Metatarsal Heads
  - Sesmoid Bones
  - Plantar Fascia
- Medial Calcaneal Tubercle
Let’s return to our examination of rearfoot and forefoot posture…

- Finding subtalar neutral
- Weight bearing and non-weight bearing
STRESS

- Bone
- Joint
- Muscle / Tendon
- Nerve
- Vascular
Why so many bones, ligaments, and muscles?
FIGURE 14–21. The transverse tarsal joints allow for pronation and supination during standing on uneven surfaces.
BONE

- Long Bone Compression Test
JOINTS - TOES

- MTP Valgus
- MTP Varus
- IP Valgus
- IP Varus
JOINT – TARSALS & METATARSALS

- Glides
  - Intermetatarsal
  - Tarsometatarsal
  - 1st Ray
  - Midtarsal
RANGE OF MOTION

- Axis of Rotation
- Movements Available

Flexion and Extension
(MTP, IP, PIP, and DIP)

Rearfoot (Subtalar) Inversion and Eversion

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MUSCLE
Muscle Actions

Figure 9

Fig. 4. Muscle action on the subtalar joint. Angle represents relative effectiveness as an inverter or eveter. Length of line indicates relative force. PL = peroneus longus; PB = peroneus brevis; EDC = extensor digitorum communis; EHL = extensor hallucis longus; S = soleus (actual length 5 times that shown); FHL = flexor hallucis longus; AT = anterior tibialis; PT = posterior tibialis.
Dermatomes

L4

L5

S1

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VASCULAR

Posterior Tib

Dorsalis pedis artery
Deep fibular (peroneal) nerve
Extensor hallucis brevis
Extensor digitorum brevis

Dorsal Pedis

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Questions?
Regions
JOINTS

- Interphalangeal (IP)
- Metatarsal-phalangeal (MTP)
- Tarsometatarsal (TMT)
- Transverse Tarsal Joints
- Subtalar Joint
- TaloCalcaneoNavicular Complex