Inspection

- Standing, feet straight forward facing toward examiner
  - Swelling
  - Deformity
    - Flatfoot (pes planus and hindfoot valgus)
    - High arch (pes cavus and hindfoot varus)
    - Peek-a-boo heel – Varus
    - Too many toes – Valgus
    - Hallux valgus/varus
    - Hammertoes/Clawtoes/Cross over toes etc.

- Standing, feet straight forward facing away from examiner
  - Hindfoot varus or valgus
  - Calf atrophy

- In general
  - Calluses and location
  - Swelling
  - Skin condition

Palpation

- Bones
  - Shaft of tibia and fibula, extending down to medial and lateral malleoli
  - Neck and dome of talus
  - Navicular tuberosity
  - 5th Metatarsal
  - Midfoot tarsometatarsal joints
  - Metatarsal heads, metatarsal phalangeal joints
  - Calcaneus, including medial head
  - Sinus Tarsi

- Ligaments
  - Anterior Inferior Tibiotalar ligament (AITFL, syndesmosis)
  - Anterior Talofibular ligament (ATFL)
  - Calcaneofibular ligament (CFL)
  - Deltoid ligament complex

- Tendons
  - Achilles
  - Posterior tibial tendon
  - Peroneal tendons
  - Tibialis anterior
Physical Examination of the Foot & Ankle

ROM – Always compare to contralateral side
- Ankle - Dorsiflexion/Plantarflexion
- Subtalar - Inversion/Eversion
- Transverse Tarsal – Calcaneal cuboid and talonavicular joints; abduction/adduction
- MTP
- Phalangeal

Types of ROM
- Active
- Passive
- Resistive

Neurovascular Assessment
- Nerve function
  - Motor strength
    - Achilles
    - Tibialis posterior
    - Peroneals
  - Tibialis anterior
  - Extensor hallucis and digitorum longus
  - Flexor hallucis and digitorum longus
- Sensation - 5.07 or 10 gram monofilament

Vascular status
- Distal pulses – DP/PT pulse
- Capillary refill
- Dependent erythema

Gait Analysis
- Phase of gait
- Stride length
- Foot progression
- Asymmetry
- Examine the soles of shoes/insoles
**Special Tests**

- **Talar Tilt test – integrity of lateral ankle ligaments**
  - **Patient Position:** Sitting or prone with ankle off the end of the table
    *Patient must be relaxed*
  - **Examiner Position:** Sitting
  - **Procedure:** Stabilize tibia and medially shift talus; compare to contralateral side
  - **Positive Test:** Increased laxity or soft end point (subtle)

- **Anterior Drawer – integrity of anterior talofibular ligament**
  - **Patient Position:** Sitting
    *Patient must be relaxed*
  - **Examiner Position:** Sitting
  - **Procedure:** Stabilize tibia, draw ankle forward while gripping hindfoot (talus and calcaneus) with ankle neutral or 10-20° plantarflexion
  - **Positive Test:** Increased laxity compared to contralateral side

- **External Rotation or Kleiger’s Test – syndesmotic injuries**
  - **Patient Position:** Supine
  - **Examiner Position:** End of bed
  - **Procedure:** Stabilize tibia and externally rotate foot
  - **Positive Test:** Pain at AITFL (1cm above ankle and lateral joint)
Physical Examination of the Foot & Ankle

- **Thompson’s Test – integrity of Achilles tendon**
  - **Patient Position**: Prone with or without knee at 90°
  - **Examiner Position**: Side of the bed
  - **Procedure**: Squeeze calf and look for plantarflexion
  - **Positive Test**: Minimal or no plantarflexion compared to contralateral side

- **Posterior Crunch Test – posterior ankle impingement, os trigonum**
  - **Patient Position**: Prone with ankles off the end of the bed
  - **Examiner Position**: End of bed
  - **Procedure**: Max plantarflexion of ankle
  - **Positive Test**: Pain in posterior ankle

- **Silfverskiold Test – gastroc muscle contracture**
  - **Patient Position**: Supine
  - **Examiner Position**: Side of the bed
  - **Procedure**: Check dorsiflexion of ankle with knee extended fully vs flexed
  - **Positive Test**: 10° increase in dorsiflexion with knee bent
Colman Block Test – forefoot/hindfoot driven varus

<table>
<thead>
<tr>
<th>Patient Position</th>
<th>Standing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examiner Position</td>
<td>Behind patient</td>
</tr>
<tr>
<td>Procedure</td>
<td>1 to 1.5cm block or book under heel and lateral rays of foot</td>
</tr>
<tr>
<td></td>
<td>*Not under 1st MTP joint</td>
</tr>
<tr>
<td>Positive Test</td>
<td>Varus corrects with block = forefoot driven</td>
</tr>
</tbody>
</table>