Considerations when developing a functional lower extremity rehabilitation program

I. Lower extremity alignment
   A. STJ:
      Pronation / Supination
      Open chain
      1. Supination
         \textit{calcaneal inversion}, adduction, plantarflexion
      2. Pronation
         \textit{calcaneal eversion}, abduction, dorsiflexion
      Closed chain
      1. Supination
         \textit{calcaneal inversion}, talar dorsiflexion and abduction
      2. Pronation
         \textit{calcaneal eversion}, talar plantarflexion and adduction

Navicular drop test

B. Knee:
II. Kinetic chain
   A. Open Kinetic Chain
      Tib-fem jt.: 
      Patfem jt.: 
      Increases as the knee moves from flexion to extension.
   B. Closed Kinetic Chain
      Tib-fem jt.: 
      Patfem jt.: 
      Decreases as the knee moves from flexion to extension.
      Walking: 0.5 times BW
      Stairs: 3.3 times BW
      Deep squat: 7.8 times BW

III. Balance and proprioception
   A. Assessment of joint proprioception
      i. Joint re-position sense
      ii. Detection of joint movement
      iii. Postural correction responses

   B. Rehabilitation: attempt to promote the development of protective compensatory patterns to encourage involuntary muscle response to destabilizing forces.

References


