

1st rocker Eccentric tib ant
2nd Eccentric ~~ant~~ soleus
GAIT 3rd concentric ~~ant~~ gastroc

Pattern of movement involved in bipedal locomotion

Gait cycle = Initial contact of one foot - to same foot initial contact
= Stride

Step = Initial swing - contact of same limb

Stance phase 60% = Initial contact to toe off

Swing 40%

Double support 10% $\frac{1}{2}$ at either end of stance

Initial contact ^{instantaneous point}

GRF behind ankle & knee

* Eccentric tib ant (ankle plantar flexion)

Eccentric quads (knee flexion)

Start of double support

1st rocker

1 Loading response Whole foot in contact with ground to end of double support
1st rocker

2 Mid stance Second rocker ^{soleus}
* Eccentric calf contraction (DF ankle)
GRF in front of ankle & knee & hip
Extension of knee & hip = Energy conserving

3 Terminal stance 3rd Rocker ^{gastroc}
(Pre swing) Heel rise due to * concentric gastroc contraction
GRF passes behind knee $\rightarrow$ knee flexes
Ends with toe-off

SWING

- 1 Initial swing Begins with toe off Tib ant concentric
Ends with Maximal knee flexion ^{Passive knee flexion with Hip flex}
- 2 Mid swing $\rightarrow$ Tibia perpendicular to ground
- 3 Terminal swing $\rightarrow$ Initial contact

5 Prerequisites of normal gait (Gage)

1. Stability in stance
2. Adequate foot clearance in swing
3. Adequate step length
4. Pre positioning of foot
5. Energy conservation by ^{Minimising vertical excursion}
Ensuring it stability achieved whenever possible

Abnormal gait

Trendelenburg Trunk lean

Short leg gait - Circumduction hip abducts during ^{swing}
- Hip hitching Abdo & spinal muscles raise pel
- High stepping
- Vaulting ^{Plantar flexion of ankle of}
short limb during stance

Antalgic

Shortened single support during stance
& shortened swing on contralateral leg