Gait Cycle
Definitions

**Step Length:** Distance between corresponding successive points of heel contact of the opposite feet.

**Stride Length:** Distance between successive points of heel contact of the same foot. This is equal to 2 steps.

**Stance Phase:** Foot in contact with the floor.

**Swing Phase:** Foot not in contact with the floor.

Subdivisions of the Phases of the Gait Cycle

Stance Phase:

1. **Heel contact:** ‘Initial contact’
2. **Foot-flat:** ‘Loading response’, initial contact of forefoot w. ground
3. **Midstance:** greater trochanter in alignment w. vertical bisector of foot
4. **Heel-off:** ‘Terminal stance’
5. **Toe-off:** ‘Pre-swing’
Swing Phase:

1. **Acceleration**: ‘Initial swing’

2. **Midswing**: swinging limb overtakes the limb in stance

3. **Deceleration**: ‘Terminal swing’
Gait Abnormalities

**Scissoring Gait:** This is due to anoxic brain damage and results in breathing problems which may result in choking.

The features are:

- rigidity and excessive adduction of the leg in swing
- plantar flexion of the ankle
- flexion at the knee
- adduction and internal rotation at the hip
- contractures of all spastic muscles

The individual is thus forced to walk up on tip-toe, the other contractures resulting in the knees rubbing together and crossing in a manner analogous to scissors.

In addition to a scissor gait, there may be complicated assisting movements of the upper limbs when walking.

**Trendelenburg Gait:** The abductors of the thigh (namely gluteus medius and gluteus minimus) do not function properly resulting in pelvic drop of the opposite side. In unilateral type, the patient puts his hand on gluteal region. In bilateral type, the patient moves the whole pelvic every time.

**Foot Drop:** It is a significant weakness of ankle and toe dorsiflexion. The patient tends to walk with an exaggerated flexion of the hip and knee to prevent the toes from catching on the ground during swing phase. In simple words, the patient will drag the leg (limp). This might also result in *high step* which is due to an attempt by the patient to lift the leg high enough during walking so that the foot does not drag on the floor.