

Exercise Therapy

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Scissors Gait

Definition

Scissors gait is an abnormal gait characterized by excessive hip adduction, causing the thighs and knees to cross or come close to crossing each other during walking. It is commonly associated with spasticity of the hip adductor muscles, particularly in spastic diplegic cerebral palsy.

Causes

- Spastic diplegic cerebral palsy.
- Upper motor neuron lesions affecting both lower limbs.
- Spinal cord injury involving motor pathways.
- Hereditary spastic paraplegia.
- Other neurological conditions causing bilateral lower-limb spasticity.

Gait characteristics

- Excessive hip adduction during walking.
- Thighs and knees move toward or across the midline.
- Narrow base of support.
- Increased muscle tone in the hip adductors.
- Reduced step length.
- Restricted lower-limb movement due to spasticity.
- Toe walking may occur when plantar-flexor spasticity is also present.
- Difficulty maintaining balance and an increased risk of falls.

Gait deviations

- Initial contact: The feet may contact the ground with a narrow base of support; forefoot contact may occur if plantar-flexor spasticity is present.
- Loading response: Excessive hip adduction may bring the knees closer together and compromise stability.
- Mid stance: The affected lower limbs may remain adducted, producing a narrow stance and reduced lateral stability.
- Terminal stance: Hip adduction and associated muscle stiffness may restrict normal limb progression.
- Pre-swing: Increased adductor tone may limit smooth separation of the legs.
- Initial swing: The advancing limb may move toward the midline rather than progressing independently.
- Mid swing: The thighs or knees may cross, producing the characteristic scissoring movement.
- Terminal swing: The foot may approach or cross the midline, resulting in a narrow and potentially unstable foot placement.

Functional problems

- Difficulty walking with a stable base of support.
- Difficulty separating the legs during walking.
- Reduced walking speed and step length.
- Difficulty turning and negotiating obstacles.

- Increased risk of tripping and falling.
- Difficulty with activities requiring independent lower-limb movement.

Joint Movements During Gait: Sagittal, Frontal and Transverse Plane Motions

Gait Cycle Phases

Determinants of Gait

Gait Analysis: Definition, Spatial and Temporal Variables

Gait Cycle: Definition, Phases and Gait Analysis with Diagrams

Human Gait

Reference:

1. O'Sullivan SB, Schmitz TJ, Fulk GD. Physical Rehabilitation. Elsevier.
2. Magee DJ. Orthopedic Physical Assessment. Elsevier.

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