

1. (Gait cycle)

(gait analysis) (ground reaction force) (swing phase) (standing phase)

가

60% 40%

가<sup>10)</sup>(Fig. 1).

(single-limb support)가 40% 20%

가

(double-limb support)

가 (kinematics), (kinetics) strike (initial contact) Heel-

가

가

(coronal plane), (sagittal plane) (transverse plane) 3 가 (toe-off)

가

:

가 7 가 가 19).

3.

가

(running)

“ float 까 10).

가 6).

2.

(step length)

16).

(stride length)

4.

4~5

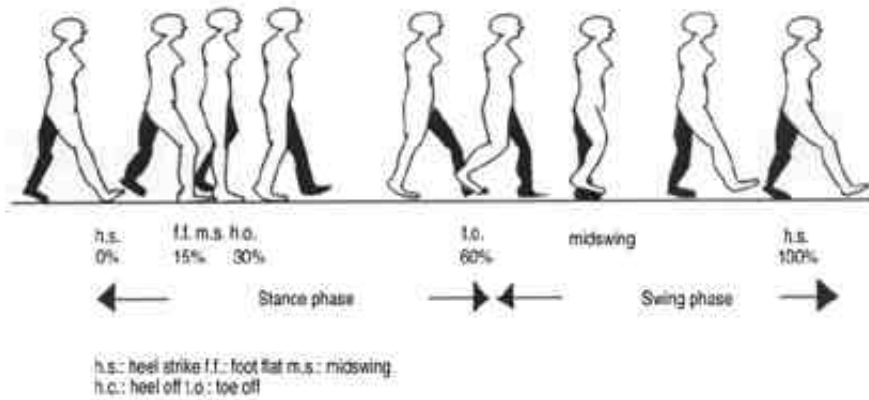
(cadence) 100 가 가

110 (walking velocity) 2

가 5).

가 1, 16, 19)

가 , 3 가 가



**Fig. 1.** Picture showing one gait cycle including stance and swing phase. In stance phase, the limb supports the weight of the body. In swing phase, the limb advances forward.

가 가  
 18)  
 가 “ calcaneal ” 8,14)  
 가 2,13)  
 12 가 (power 가 가  
 20) generation) “ Trendelenburg ”  
 (power absorption)  
 3  
 가 9) 5.  
 (surface electrode)  
 (fine-wire electrode)  
 7,23) 가 , 가  
 가 15,22) (antalgic) 가  
 (Foot drop)  
 11)  
 가 (concentric contrac- 가 Trendelenburg  
 ture) (power (lever arm)  
 generation) 가 가  
 가 (eccentric contracture) . Extensor lurch  
 absorption) (power  
 2 가 (gluteus maximus)  
 가 . Crouch  
 (iliopsoas)  
 가  
 12,17,21) 가  
 가 (anterior (Jump) crouch 가  
 tibialis) 가가 . scissoring  
 가 가  
 가 (Leg length discrepancy)  
 가

6. (Kinematics) 2) 15

(angular rotation), (anterior tilt) 가 (Fig 2).

(sagittal plane), (coronal plane) (hamstring) (posterior tilt) 가

(transverse plane) 3 가

3,4) 가 (Fig. 3A).

1) (posterior superior iliac spine) (iliotibial band) (anterior superior iliac spine)

(Fig. 3B). 가

가

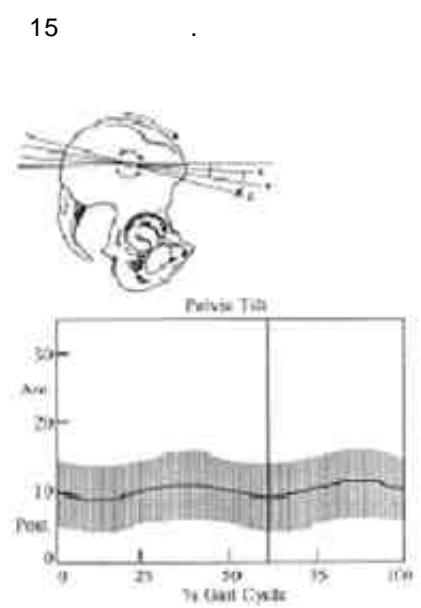


Fig. 2. Normal kinematics of pelvis in sagittal plane.

가 (pendulum movement) (Fig. 4A).  
 가 (persistent primitive reflex) 가

가 (Fig 4B). 가 (Fig. 4C). 가

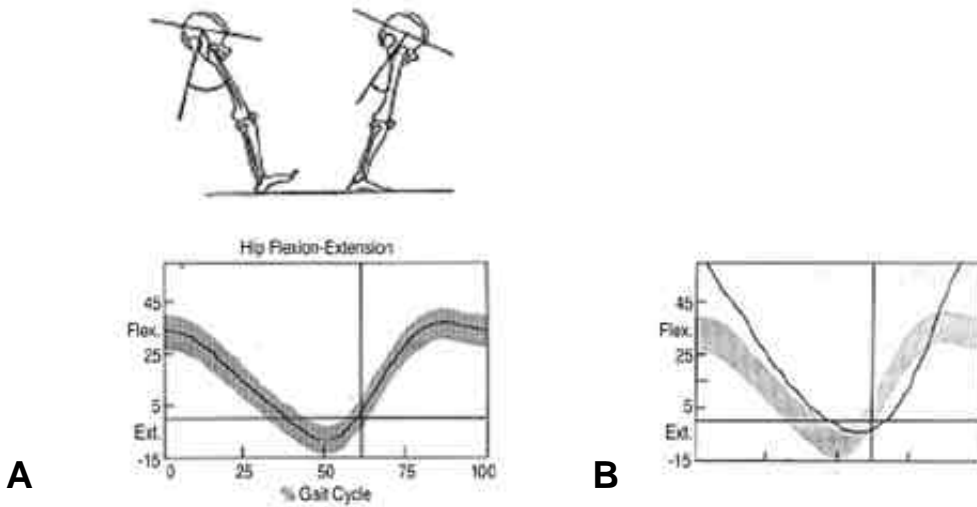


Fig. 3. Normal and abnormal kinematics of hip in sagittal plane. (A) Normal hip flexion and extension. (B) Excessive hip flexion and inadequate hip extension in stance phase.

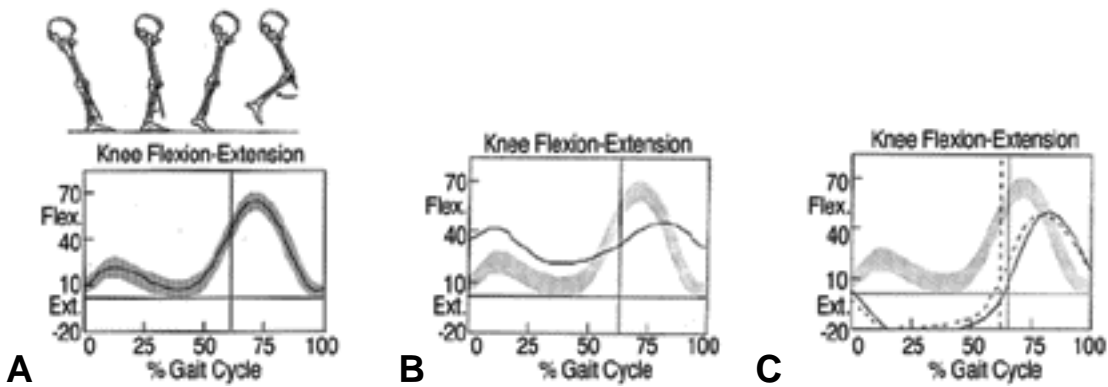


Fig. 4. Normal and abnormal kinematics of knee in sagittal plane. (A) Normal knee flexion and extension. (B) Excessive knee flexion and inadequate extension in stance phase. (C) Excessive knee extension and inadequate flexion in stance phase.



가 가  
(Fig. 6C).

Trendelenburg

2)

(obliquity)  
가

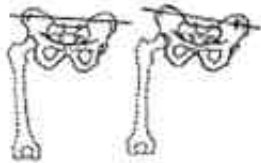
(Fig. 8A). 가

sissoing

가

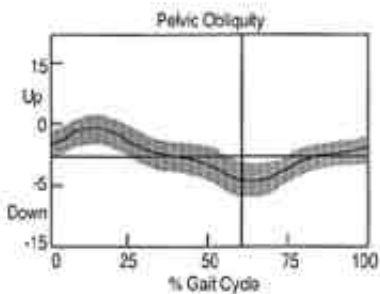
(Fig. 7). 가

가



가 (Fig. 8B).

가



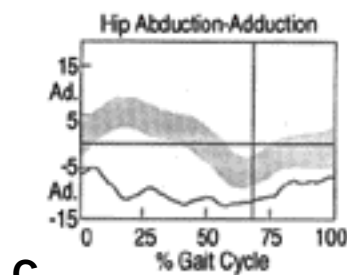
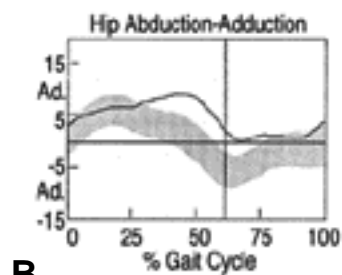
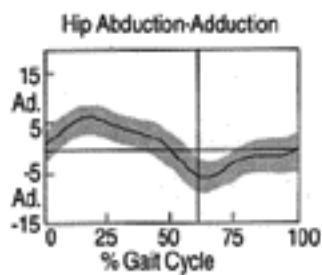
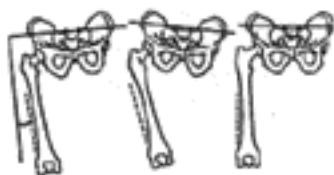
가

(Fig 8C).

가

가

Fig. 7. Normal kinematics of pelvis in coronal plane.



A

B

C

Fig. 8. Normal and abnormal kinematics of hip in coronal plane. (A) Normal hip adduction and abduction. (B) Excessive hip adduction. (C) Excessive hip abduction.

가

가

3)

(Fig. 9, 10).

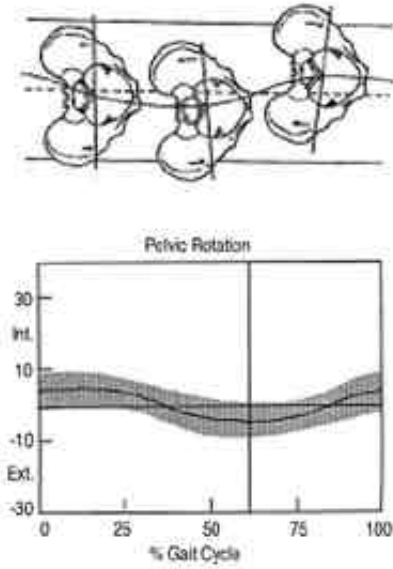


Fig. 9. Normal kinematics of pelvis in transverse plane.

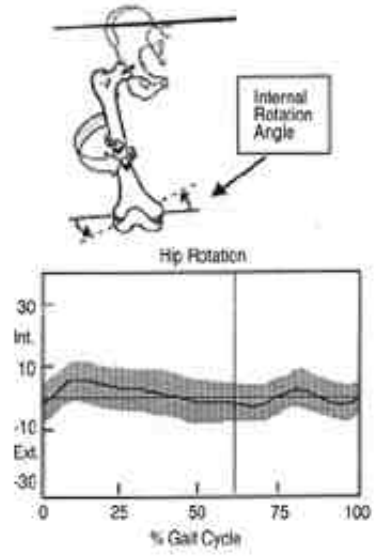


Fig. 10. Normal kinematics of hip in transverse plane.

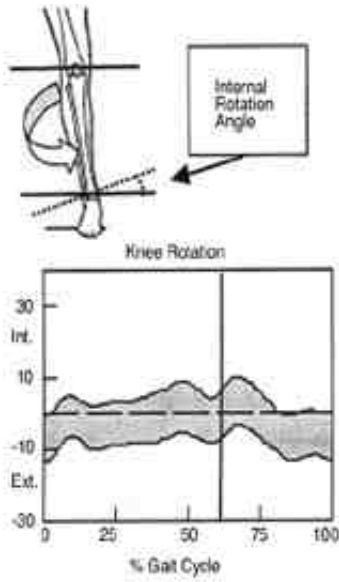


Fig. 11. Normal kinematics of knee in transverse plane.

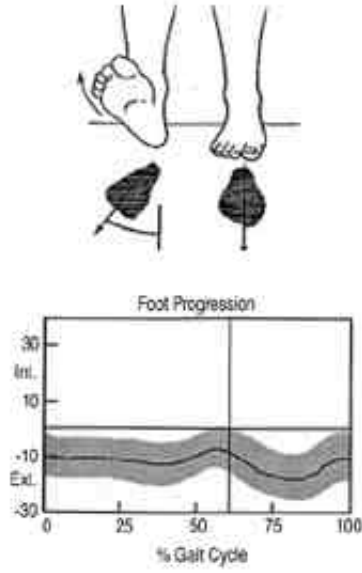


Fig. 12. Normal kinematics of foot in transverse plane.



(Fig. 11)

가

10 ~ 15

(Fig. 12).

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