UNDERSTANDING PLANES AND AXES OF MOVEMENT

TERMINOLOGY

Anterior: Toward or on the front of the body: in front of. The pectorals are on the anterior aspect of the body

Posterior: Towards or on the back of the body: behind. The rhomboids are on the posterior aspect of the body

Superior: Toward the head or upper part of a structure: above. The humerus is superior to the radius

Inferior: Toward the lower part of a structure: below. The tibia is inferior to the femur

Medial: Toward or at the midline of the body: inner side. The adductors are medial to the abductors

Lateral: Away from the midline of the body: outer side. The abductors are on the lateral aspect of the leg

PLANES AND AXIS

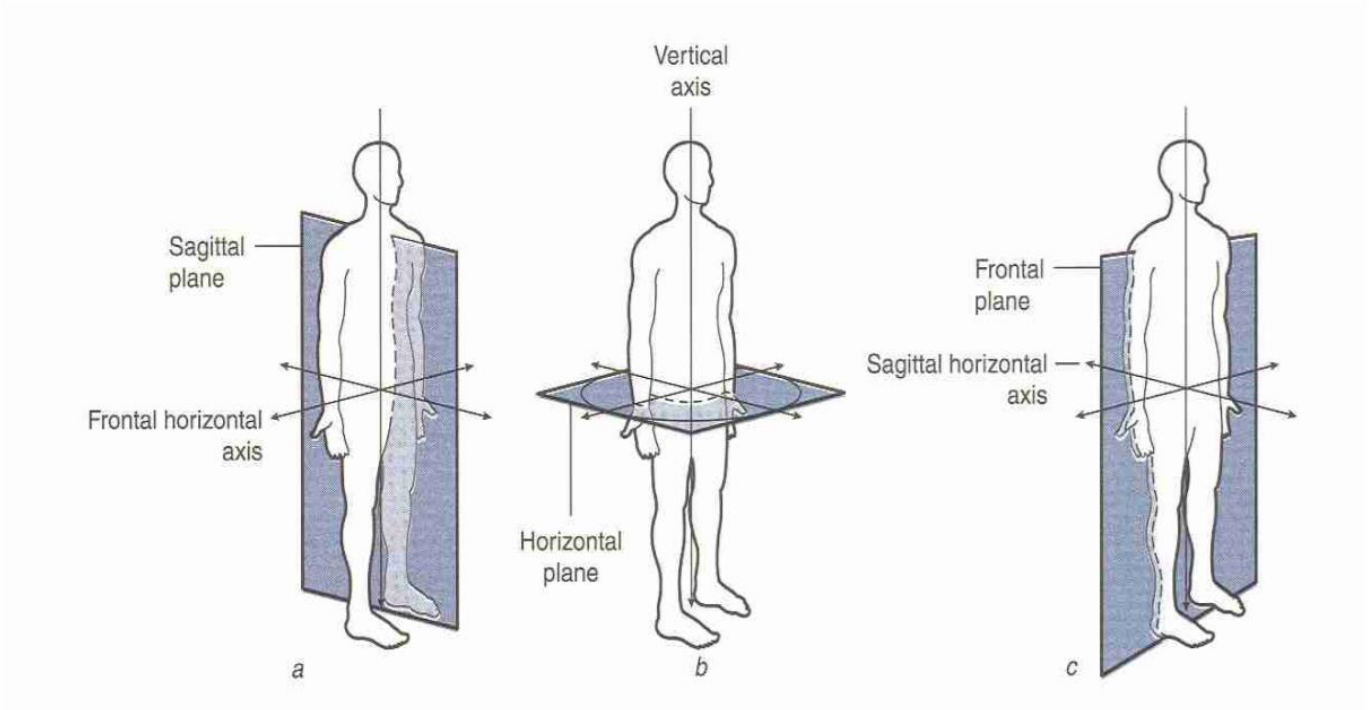
Human movements are described in three dimensions based on a series of planes and axis. There are three planes that pass through the human body.

- The sagittal plane
- The frontal plane
- The transverse (horizontal) plane

The sagittal plane lies vertically and divides the body into right and left parts.

The frontal plane also lies vertically but divides the body into anterior and posterior parts.

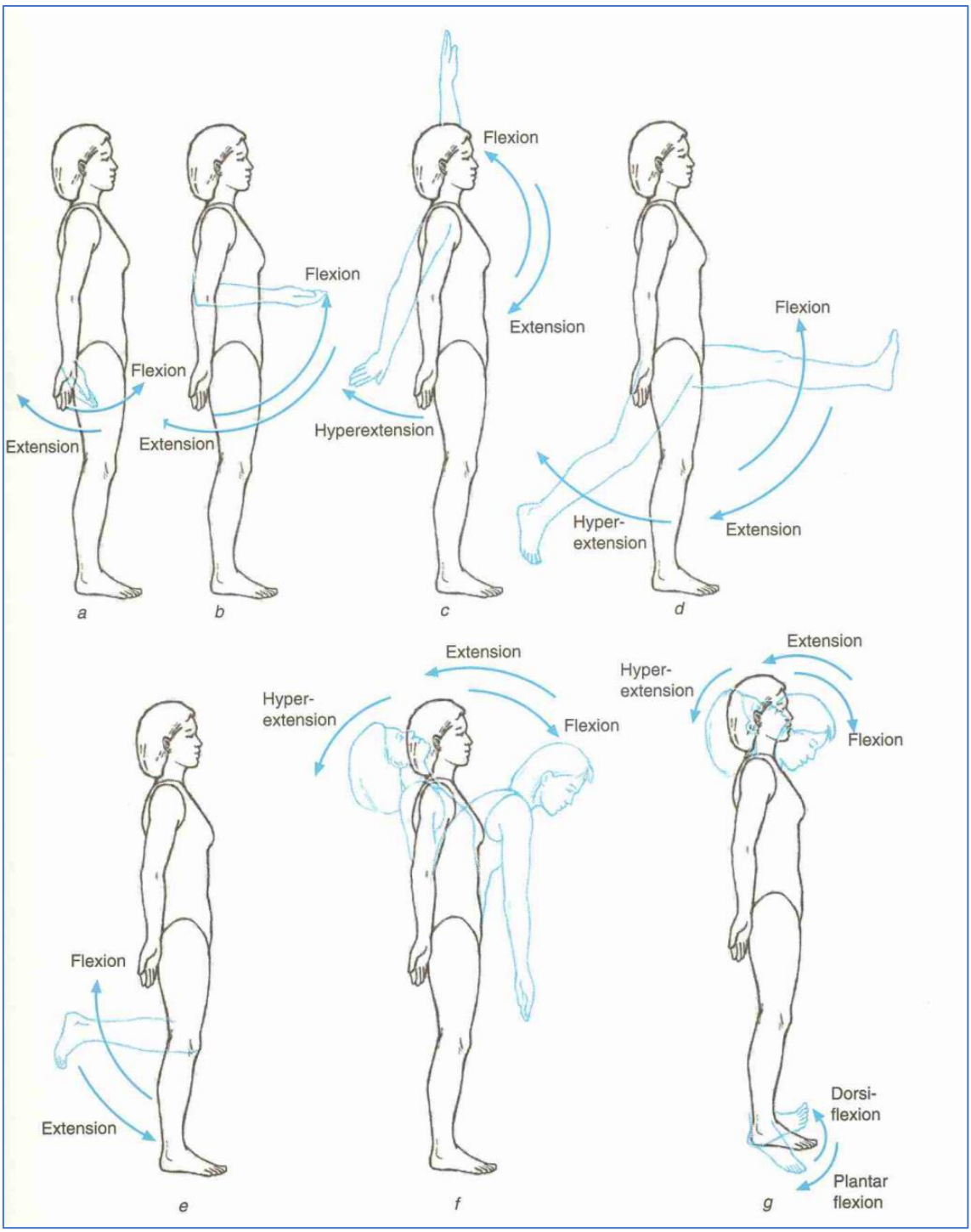
The transverse plane lies horizontally and divides the body into superior and inferior parts.

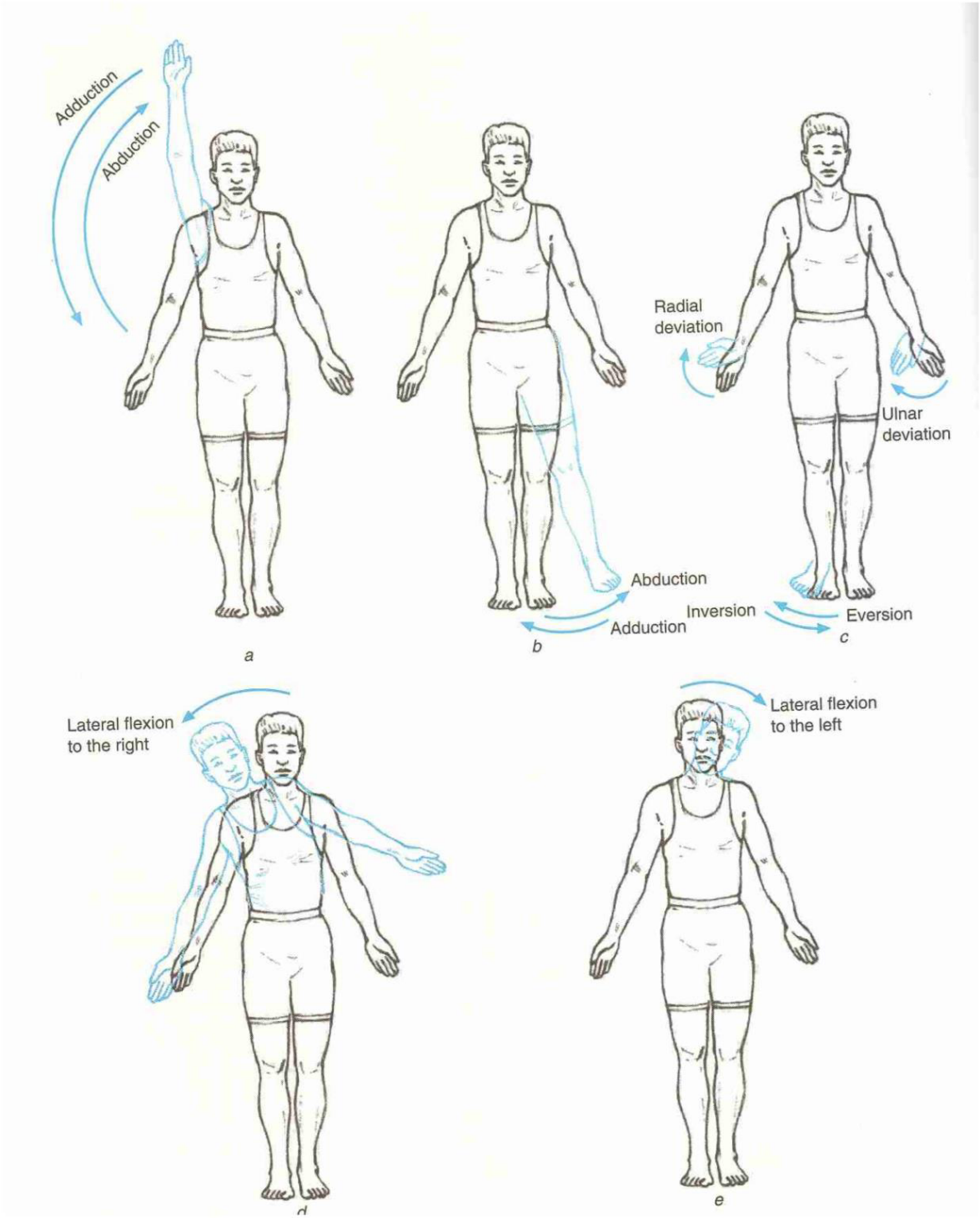


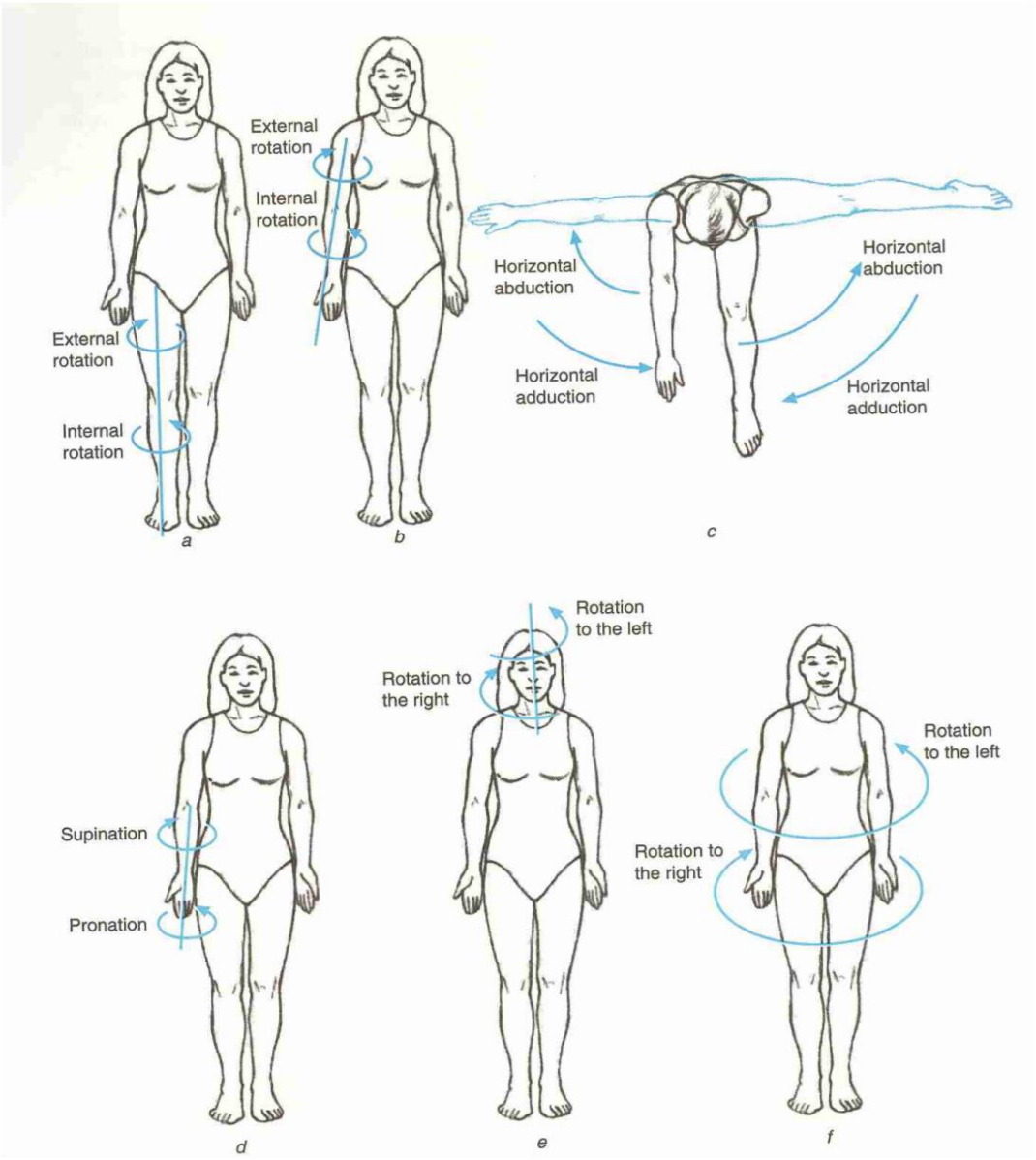
PLANES OF MOTION AND FUNCTION

- There is a tendency when describing a movement for it to be referred to in the particular plane that it is dominated by. An example of this would be a description of walking as a sagittal plane movement.
- In reality this is really only a description of the gross direction of movement and movement will be occurring in several planes not solely in the sagittal plane.
- This simultaneous movement can be seen as one motion with three components……tri-planar motion

Functional movements are three dimensional, however it is biomechanically understood that description in single plane terms is most useful when analysing gross movement patterns.




Adduction
Abduction
a
Abduction
Adduction
b
Radial deviation
Ulnar deviation
Inversion
Eversion
c
Lateral flexion to the right
d
Lateral flexion to the left
e


External rotation
Internal rotation
External rotation
Internal rotation
a
b
Horizontal abduction
Horizontal abduction
Horizontal adduction
Horizontal adduction
c
Supination
Pronation
d
Rotation to the left
Rotation to the right
e
Rotation to the left
Rotation to the right
f