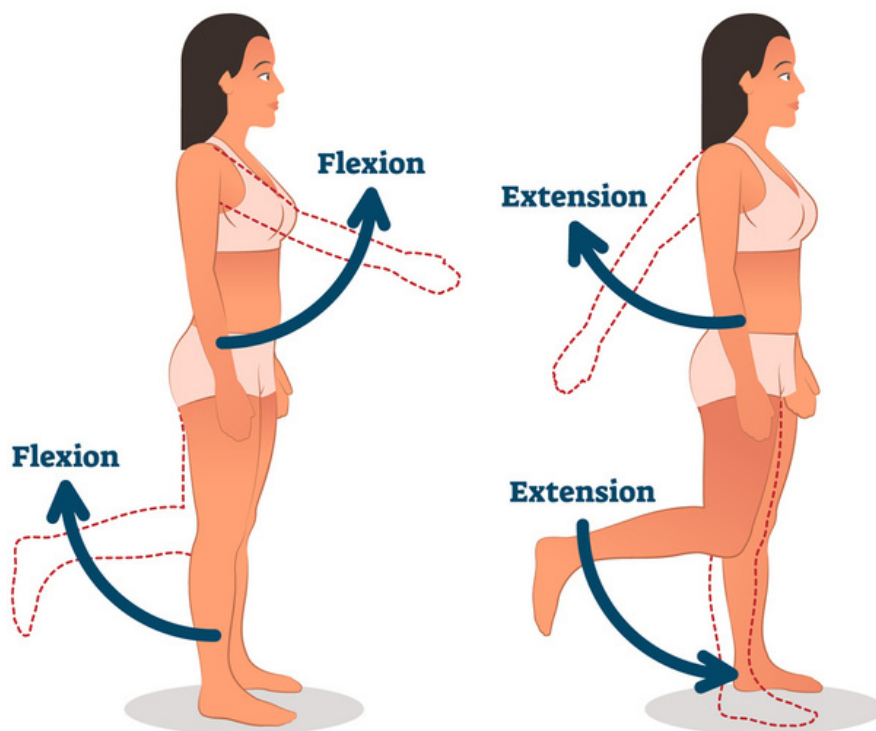


JOINT ACTIONS

STUDY GUIDE

INTRODUCTION:

The motions of bones that are permitted by joints are described with the terms known as “joint actions”. Examples of joint actions include flexion, extension, adduction, abduction, horizontal adduction, horizontal abduction, internal rotation, and external rotation. Movement professionals can use knowledge of joint actions to aid in analyzing motion; for example, a wide-grip (conventional) pull-up is shoulder joint adduction, and a close-grip (chin-up) pull-up is shoulder extension. Or, during a lunge the hip joint performs extension, the knee joint performs extension, and the ankle joint performs plantar flexion.



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Check out the course:
"Joint Actions"

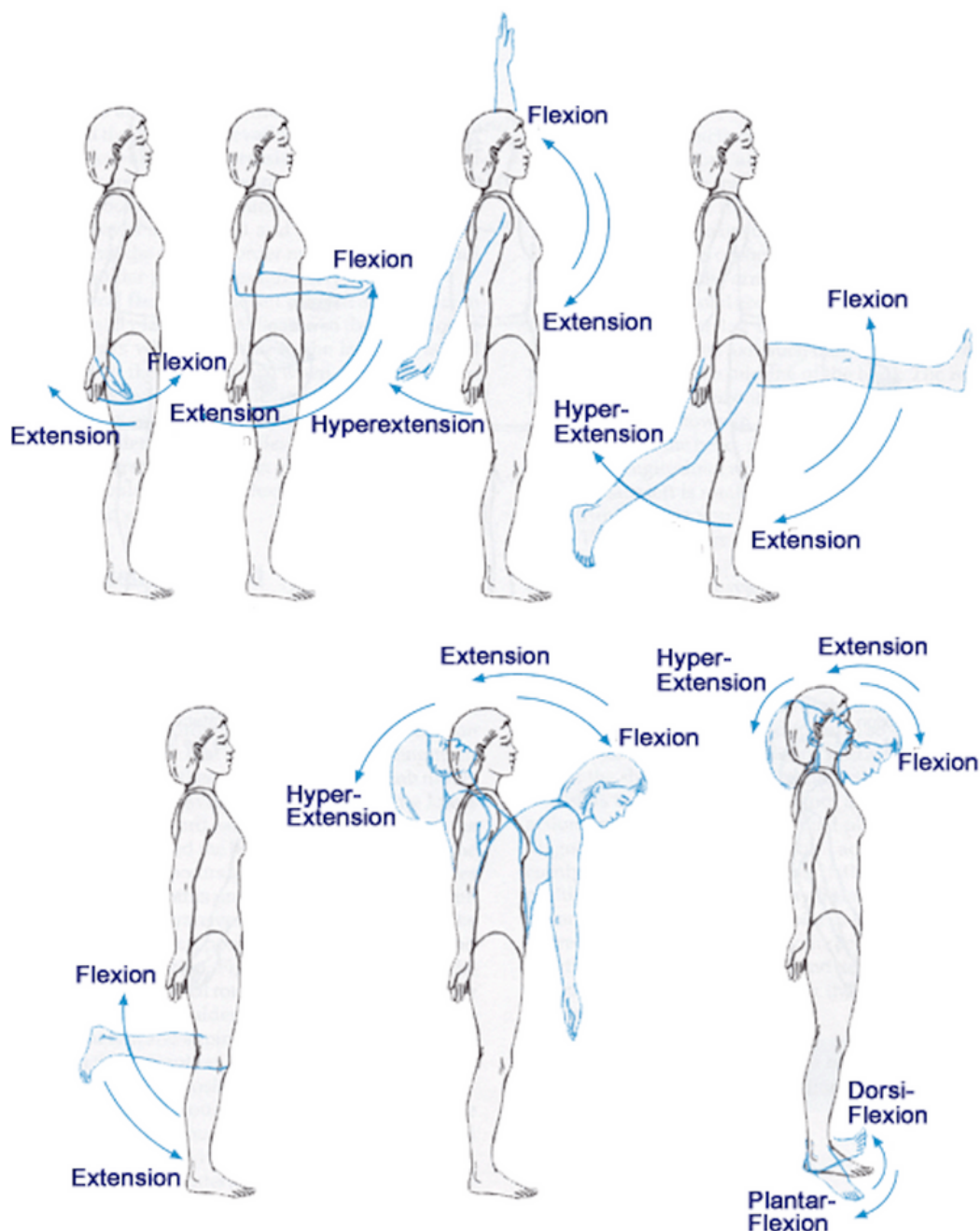
SCAN ME 



SAGITTAL PLANE JOINT ACTIONS

Flexion: A decrease in joint angle (in the sagittal plane)

Extension: An increase in joint angle (in the sagittal plane)

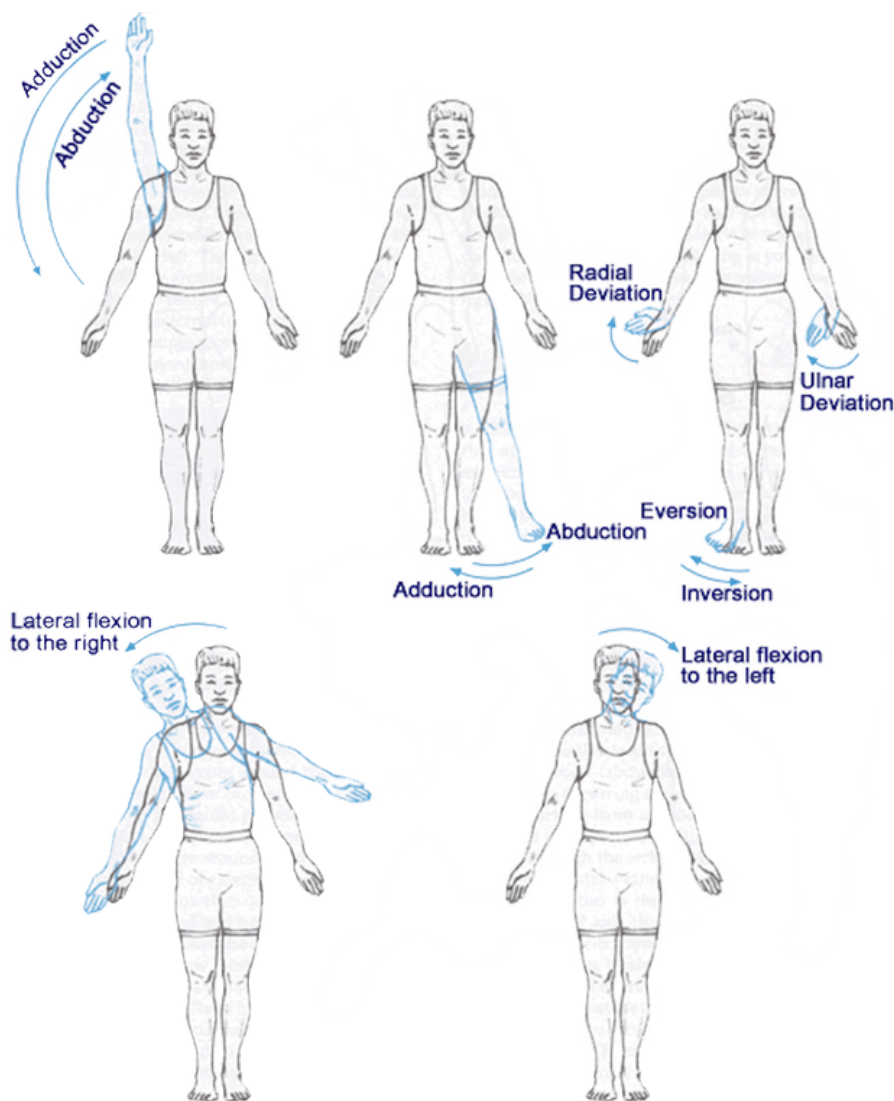


FRONTAL PLANE JOINT ACTIONS

Abduction: Movement away from the midline of the body (in the frontal plane)

Adduction: Movement toward the midline of the body (in the frontal plane)

Lateral Flexion: Displacement of the trunk away from the midline in the frontal plane (in the frontal plane)



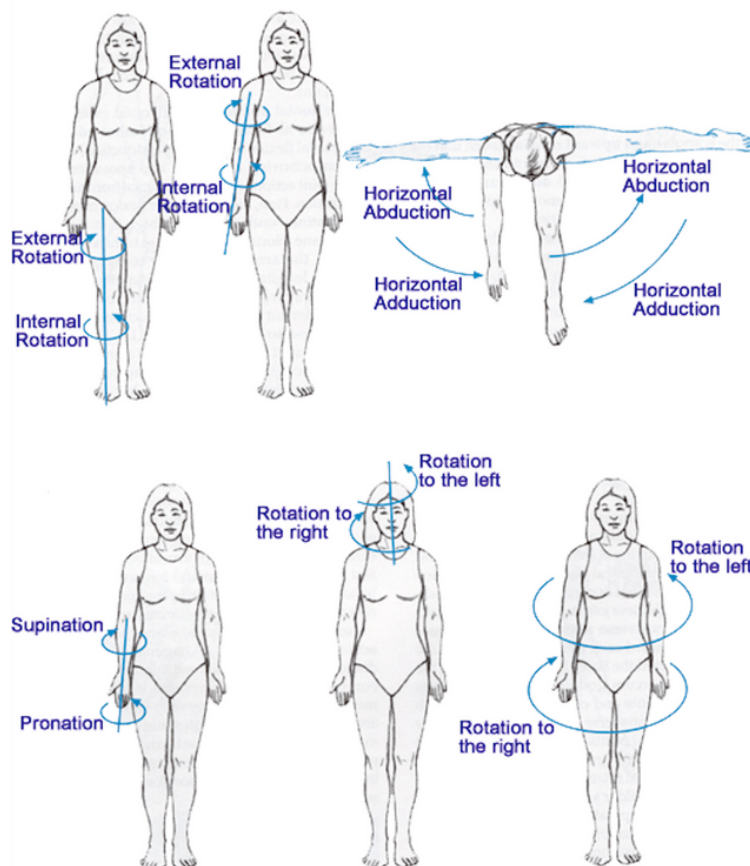
TRANSVERSE PLANE/HORIZONTAL PLANE JOINT ACTIONS

External Rotation: Movement of the anterior side of a segment away from the midline of the body

Internal Rotation: Movement of the anterior side of a segment toward the mid-line of the body

Horizontal Adduction (flexion): Horizontal motion that results in movement toward the midline

Horizontal Abduction (extension): Horizontal motion that results in movement away from the midline



TEST YOUR KNOWLEDGE:

1. Fill in on the joint actions available for the joint listed (Hint: one joint action per box)
2. Name the plane that each joint action is associated with
3. List an exercise you are familiar with that is an example of that joint action
4. The first joint action graph has been filled out for you as an example

Elbow Joint

Action	Plane	Exercise Example
Flexion	Sagittal	Biceps Extension
Extension	Sagittal	Tricep Extension

Knee Joint

Action	Plane	Exercise Example



TEST YOUR KNOWLEDGE:

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2. Name the plane that each joint action is associated with
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Shoulder Joint

Action	Plane	Exercise Example



TEST YOUR KNOWLEDGE:

- 1. Fill in on the joint actions available for the joint listed (Hint: one joint action per box)
- 2. Name the plane that each joint action is associated with
- 3. List an exercise you are familiar with that is an example of that joint action

Hip Joint		
Action	Plane	Exercise Example



TEST YOUR KNOWLEDGE:

- 1. Fill in on the joint actions available for the joint listed (Hint: one joint action per box)
- 2. Name the plane that each joint action is associated with
- 3. List an exercise you are familiar with that is an example of that joint action

Spine		
Action	Plane	Exercise Example



ANSWER KEY:

1. Fill in on the joint actions available for the joint listed (Hint: one joint action per box)
2. Name the plane that each joint action is associated with
3. List an exercise you are familiar with that is an example of that joint action
4. The first joint action graph has been filled out for you as an example

Elbow Joint

Action	Plane	Exercise Example
Flexion	Sagittal	Biceps Extension
Extension	Sagittal	Tricep Extension

Knee Joint

Action	Plane	Exercise Example
Flexion	Sagittal	Leg Curl
Extension	Sagittal	Squat

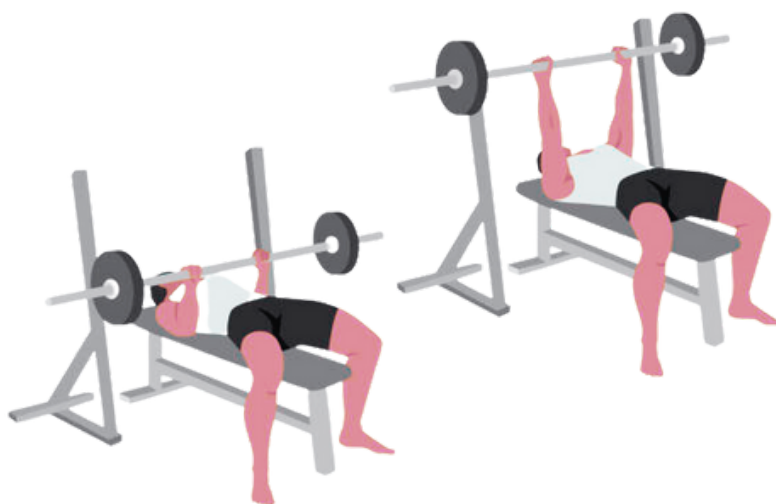


ANSWER KEY:

1. Fill in on the joint actions available for the joint listed (Hint: one joint action per box)
2. Name the plane that each joint action is associated with
3. List an exercise you are familiar with that is an example of that joint action

Shoulder Joint

Action	Plane	Exercise Example
Flexion	Sagittal	Shoulder Front Raise
Extension	Sagittal	Seated Row
Adduction	Frontal	Lat Pull Down
Abduction	Frontal	Overhead Dumbbell Press
Horizontal Adduction	Transverse	Bench Press
Horizontal Abduction	Transverse	Reverse Fly
External Rotation	Transverse	Band External Rotation
Internal Rotation	Transverse	Band Internal Rotation



ANSWER KEY:

1. Fill in on the joint actions available for the joint listed (Hint: one joint action per box)
2. Name the plane that each joint action is associated with
3. List an exercise you are familiar with that is an example of that joint action

Hip Joint

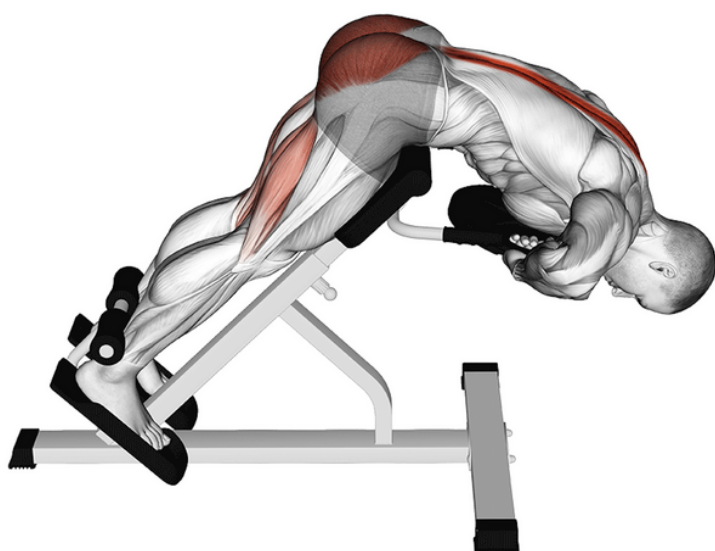
Action	Plane	Exercise Example
Flexion	Sagittal	Hanging Leg Raise
Extension	Sagittal	Deadlift (on the way up)
Adduction	Frontal	Squeezing legs together
Abduction	Frontal	Resisted side stepping
Horizontal Adduction	Transverse	Seated hip adduction machine
Horizontal Abduction	Transverse	Seated hip abduction machine
External Rotation	Transverse	Golf Swing
Internal Rotation	Transverse	Turning legs and feet out



ANSWER KEY:

1. Fill in on the joint actions available for the joint listed (Hint: one joint action per box)
2. Name the plane that each joint action is associated with
3. List an exercise you are familiar with that is an example of that joint action

Spine		
Action	Plane	Exercise Example
Flexion	Sagittal	Crunch
Extension	Sagittal	Reverse Hyperextension
Lateral Flexion	Frontal	Side Bending
Rotation	Transverse	Chops





Complete review and bibliography:

Online Course:
"Joint Actions"

 BROOKBUSHINSTITUTE.^{W03}

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