

EPE 335 - Biomechanics

LAB: Movement Description

Recommended Reading Assignment: Textbook: Chapter 2

Introduction: In order for descriptions of body segments to be meaningful, movement specialists must be able to communicate with one another using a standard set of nomenclature. In general, planes and axes of motion are used to describe the orientation of the body segments while joint action nomenclature is used to describe the actual movement at a particular joint. Using the anatomical position as a reference, the figure and table on the back of this page display the cardinal planes and axes of motion, selected directional terms, and definitions of fundamental joint actions.

Purpose: To review terminology used to describe human movements, including planes and axes of motion and joint actions, and to utilize this terminology in the analysis of joint actions for selected movements.

General Procedures: Using the movement analysis data sheets that follow, provide the requested information that describes each of the following movements: 1) biceps curl; 2) shoulder press (wide grip); 3) bench press (wide grip); 4) push up (narrow hand placement); and 5) sit-up with a twist. Your laboratory instructor will demonstrate these five movements for you.

Assignment: You should complete this entire exercise before leaving lab. You do not need to turn anything in. Verify with the lab instructor that your solutions are correct. Use the completed worksheets to help you prepare for next week's quiz and upcoming exams.

1) Biceps Curl

Joint / Movement	Start position	Joint action(s)	Plane	Axis
Elbow / raise (starting with dumbbells in a lowered position)				
Elbow / lower (starting with dumbbells in an elevated position)				

2) Shoulder Press (wide grip)

Joint / Movement	Start position	Joint action(s)	Plane	Axis
Elbow / push up (starting with dumbbells in a lowered position)				
Shoulder / push up				
Elbow / return (starting with dumbbells in an elevated position)				
Shoulder / return				

3) Bench Press (wide hand placement)

Joint / Movement	Start position	Joint action(s)	Plane	Axis
Elbow / push up (starting with dumbbells in a lowered position)				
Shoulder / push up				
Elbow / return (starting with dumbbells in an elevated position)				
Shoulder / return				

4) Push Up (narrow hand placement)

Joint / Movement	Start position	Joint action(s)	Plane	Axis
Elbow / push up (starting with torso in a lowered position)				
Shoulder / push up				
Elbow / return (starting with torso in an elevated position)				
Shoulder / return				

5) Sit-up with a twist (upward movement only)

Joint / Movement	Start position	Joint action(s)	Plane	Axis
Elbows (starting with torso in a lowered position)				
Shoulders				
Torso				
Hips				
Knees				
Ankles				