6 Joints Assessments



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mfef

Committed to the Health of Our Nation

Outline

- Welcome / Objectives
- Tips for assessing clients online
- Simple Upper Body Assessment Flow

 What to look for
 Common findings
- Using the NeuroBiomechanical Lens during assessments
- Examples
- Technology Discussion



Mindset – Movement Objectives

Lower Body

- Gait
- Ground reaction forces

Upper Body

- Manual Manipulation
- Counterbalance Lower Body

CORE

Energy Transfer







Joint by Joint Model – Mobility vs. Stability Stability Mobility Stability Mobility





Mindset – Movement Objectives

Lower Body

- Gait
- Ground reaction forces

Upper Body

- Manual Manipulation
- Counterbalance Lower Body

The whole system should be evaluated!





CORE

Energy Transfer

Sensory and Motor Humunculus





Sensory Homunculus and Motor Homunculus sculptures at the Museum of Natural History, London, based on the cortical homunculi mapped by Dr. Wilder Penfield. Photographed by Dr. Joe Kiff.

https://en.wikipedia.org/wiki/ Cortical_homunculus



Simple Upper Body Assessment Flow



- Posture
- Gait Walking is your #1 Screening Tool ALWAYS!
- Shoulder Flexion
- Shoulder Abduction
- Shoulder Adduction w/ Elbow Raise
- Elbow Flex/Ext
- Forearm Supination/Pronation Elbow Ext/90° Flex
- Wrist Extension/Flexion
- Wrist Ulnar/Radial Deviation
- Finger/Thumb Flexion/Ext
- Finger/Thumb Adduction/Abduction



What to look for

- Symmetry
 - \circ Side to side
 - \odot Front to back
 - \odot Top to bottom
- Alignment
- Smoothness / Efficiency of Motion
- Range of Motion
- Pain
- Body & Facial Cues ("Startle" Reflex)
 Facial distress
 - \circ Excessive blinking
 - \circ Flexion/adduction of head/shoulders





What jumps out at you?















Shoulder – Posture & Gait











Looking for: • Head alignment ICW midline/spine

• Shoulder tilt





What we can see

- 1. High Left Shoulder
- 2. Low Left Pelvis
- 3. Right Arm more Abducted than Left
- 4. Anterior Head Carriage
- Slight Hyper Kyphosis/Lumbar Lordosis
- 6. Left Lateral Glide
- 7. Right Spinal Rotation





Possible Physical Findings

- Tight posterior chain – Hamstrings & Spinal Erectors
- 2. Tight shoulder/neck





Gait

Looking for:

- Do the arches flex through the step?
- Foot overly pronated (flat) or supinated?
- Do the feet face forward (neutral), in, or out?
- Do the knees face forward (neutral), in, or out?
- Are the hips extending?
- Shoulders level?
- Which way arms swing.
- Head tilted, rotated, or "bobblehead"





Gait



What we can see

- 1. Lateral abducted arm swing
- 2. Head remains > Left than Right
- 3. Spinal Rotation





Possible Physical Findings

- 1. Thigh anterior Delt.
- 2. Tighter Posterior Chain on One Side



Gait



Other Gait Presentations

- Waddling Gait Lack Spinal Mobility
- Pelvic Rotation Lumbosacral Hypermobility
- Short Gait Hip Tightness
- Toe Out Hip Rotator Tightness
- Varus Knee Lacking Tibial Rotation
- Broad Base Balance
- Etc.....



Why is Gait and Posture So Important?



S.A.I.D. Principle

- Specific Adaptations to Imposed Demands
 - asserts that the human body adapts specifically to imposed demands.[1] It demonstrates that, given stressors on the human system, whether biomechanical or neurological, there will be a Specific Adaptation to Imposed Demands (SAID).



Shoulder Flexion – Ext/Int Rotation

- Lack of range of motion
- Twisting
- Side bending
- Increasing lordosis
- Shoulder hiking
- Elbow bends
- Neck Lateral tilt or forward glide



























Shoulder Abduction – Int/Ext Rotation

- Lack of range of motion
- Twisting
- Side bending
- Increasing lordosis
- Shoulder hiking
- Elbow bends
- Neck Lateral tilt or forward glide

















Shoulder Internal Rotation

- Lack of Range of Motion
- Inability to reach behind the back
- Excessive Shoulder Extension
- Large "Mouse Hole"
- Crawling finger
- Throwing arm back into position
- Increased Lordosis
- Shoulder Hunching

















Shoulder External Rotation

- Lack of range of motion
- Lack of flexion
- Cervical misalignment
- Crawling finger
- Throwing arm up and back into position
- Increased spinal extension
- Shoulder Elevation





















Shoulder Adduction w/ Elbow Raise

- Lack of Range of Motion
- Pain or Jamming in the Shoulder









Possible Physical Findings

- 1. Biceps tendon impingement
- 2. Tightness in back of shoulder



Elbow Flexion/Extension

- Lack of Range of Motion esp. in extension
- Pain or Jamming in the Elbow
- Supination/Pronation
- Excessive Extension













Forearm Supination/Pronation

- Lack of Range of Motion
- Tightness outside the elbow
- Numbness/tingling
- Pain at Radiohumeral joint















Wrist Extension/Flexion

- Lack of Range of Motion
- Jamming in wrist
- Tightness into fingers
- Numbness/Tingling

















Pronated



Supinated





Wrist Ulnar/Radial Deviation

- Lack of Range of Motion
- Jamming in wrist
- Finger motion substituting for wrist motion









Finger Flexion/Extension

- Lack of Range of Motion
- Very poor movement quality discoordination
 - Difficult executing instructions
- Cramping
- Wrist motion substituting for finger motion













Muscle Strength Tests

- What are we testing?
 - Latissimus Dorsi C6/7/8, Thoracodorsal Nerve
 - Deltoids C5/6, Axillary Nerve
 - Biceps/Brachioradialis C5/6/7, Musculocutaneous Nerve
 - Triceps C6/7/8, Radial Nerve
 - Supinator C6/7 /Pronator C5/6/7/T1, Deep Radial Nerve/ Median Nerve
 - Finger/Wrist Flexion/Extension C5/6/7/8/T1, Median & Ulnar

Nerve/ Radial Nerve

• Strength Testing Guidelines:

- Client initiates
- Should feel the muscle lock-in
- No pain
- No cheating/accessory motion









Latissimus Dorsi C6/7/8







Deltoids & some Biceps C5/6/7







Biceps C5/6/7 Triceps C6/7/8







Supinator C6/7

Pronator C5/6/7/8/T1









Can do in forearm Supination and Pronation

Flexors C5/6/7/8/T1 Extensors C5/6/7/8/T1





The NeuroBiomechanical Lens of Assessment



Every movement and drill/exercise is an assessment!

- Looking for:
 - 1. Threat
 - Does it hurt?
 - Is it scary?
 - Does a neural assessment (ROM) get worse?
 - 2. Quality
 - Can they perform the movement with control and precision?

- Make it smaller and/or slower
- Add sensory input



- Smaller and/or slower
- Add sensory input
- Provide external cues





A process flow to use as you assess:

- What joints seem dysfunctional?
- What muscles cross those joints?
- What drills or exercises could I give the client for those joints/muscles?
 - Joint Mobility Drills (see 5-Joint Webinar Series)
 - Nerve Glides (see 5-Joint Webinar Series)
 - Corrective exercises you already know
 - Sensory input stimulus







- Example #1: Decreased shoulder range of motion
- Assessment results:
 - Excessive kyphosis in thoracic spine
 - Anterior head carriage
 - No shoulder pain
 - No excessively weak musculature

• Possible fixes:

- Scapular & Thoracic mobility drills
- Sensory input around shoulder joint/thoracic spine
 - Deep pressure/percussion
 - Skin stim
 - Vibration
 - Stretch (kinesiology tape)



- Example #2: Shoulder range of motion & pain issues
- Assessment results:
 - Affected shoulder held higher
 - Neck pain on same side as shoulder issues
 - No spinal ROM issues

• Possible fixes:

- Scapula mobility drills
- Accessory Nerve Glide
- Sensory input around trap or shoulder
 - Deep pressure/percussion
 - Vibration
 - Temperature
 - Stretch (kinesiology tape)





- Example #3: Tennis or Golfer's Elbow
- Assessment results:
 - Elbow flex/ext ROM good
 - Grip painful and/or weak
 - Pronation or supination painful

• Possible fixes:

- Elbow, hand & finger mobility drills
- Radial (tennis) or Ulnar (golfer's) Nerve Glides
- Sensory input around elbow joint
 - Temperature at area of pain
 - Wraps (elbow)
 - Stretch (kinesiology tape)







Don't overthink your assessments



"Before I learned the art, a punch was just a punch, and a kick, just a kick. After I learned the art, a punch was no longer a punch, a kick, no longer a kick. Now that I understand the art, a punch is just a punch and a kick is just a kick." -- Bruce Lee





Sample Assessment

- Have a simple scoring system
- Compare over time
- Always not pain

	DATE:	DATE:	DATE:	
SHOULDER FLEXION				
Note range				
Torso rotation?				
Elbow locked?				
SHOULDER ABDUCTION				
Note range				
Torso lateral flexion away?				
Elbow locked?				
SHOULDER INTERNAL ROT				
Note range				
Forso tilts or rotates away?				
Upper arm level?				
SHOULDER EXTERNAL ROT				
Note range				
Torso arch or rotates ?				
Upper arm level?				
ELBOW FLEXION/EXTENSIO	N		-	
Note range				
FOREARM SUP/PRO				
Elbow extended				
Elbow at 90 degrees				
1910 -				
WRIST ULN/RDL DEVIATION				
Symmetry				
FINGER/THUMB FLEX/EXT				
Symmetry				
FINGER/THUMB ADD/ABD				
Symmetry				

SAMPLE ASSESSMENT





QUESTIONS?







6 Joints Assessments

Shoulder, Elbow, Wrist/Hand June 11th



Wrist/Hand Bonus Webinar – June 18th

Gait Assessment – August 4th

Watch for Live Anatomy Workshop this Fall!



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