

Photo Demonstration

Stroke Recovery

Two Hour Seminar

Summit Professional Education

Supplementary Resource

PREPARATORY METHODS SECTION



FOLLOW UP

- PROXIMAL STABILITY BEFORE DISTAL MOBILITY
- WORKING PROXIMAL TO DISTAL
- WORKING ON THE TRUNK AND RIGHTING REACTIONS (1,2) and affecting lower extremity weight bearing.
- ADD GREATER CHALLENGE BY SITTING ON “DOME” (3)

PREPARATORY METHODS SECTIONS



FOLLOW UP

- WEIGHT BEARING WITH SHOULDER OUTWARDLY ROTATED
- WEIGHT BEARING FOR REFLEX INHIBITING PATTERN, PROPRIOCEPTIVE INPUT AND CO-CONTRACTURE/STABILIZATION. (1)
- RIGHT SCAPULAR ELEVATION FACILITATED BY ASSOCIATED REACTION – RESISTANCE TO UNAFFECTED LEFT SHOULDER/SCAPULA IN ELEVATION IN ATTEMPT TO GET GREATER RESPONSE IN AFFECTED RIGHT SHOULDER/SCAPULAR ELEVATION. (2)
- CAN ALSO ADD TAPPING OR VIBRATION AS FACILITATORY TO UPPER TRAPEZIUS FOR SCAPULAR ELEVATION AS WELL OR CONCURRENT WITH ASSOCIATED REACTION.(3)

PREPARATORY METHODS



FOLLOW UP

- SCAPULAR MOBILIZATION
- KEY POINTS OF CONTROL: MEDIAL BORDER OF SCAPULAE/INFERIOR ANGLE AND ANTERIOR DELTOID (1) AND CRADLE ARM PER PHOTO (2)
- PASSIVE OR ACTIVE ASSISTED, DEPENDING ON PATIENT ABILITY
- SCAPULAR ELEVATION AND DEPRESSION (1)
- SCAPULAR PROTRACTION AND RETRACTION (2)

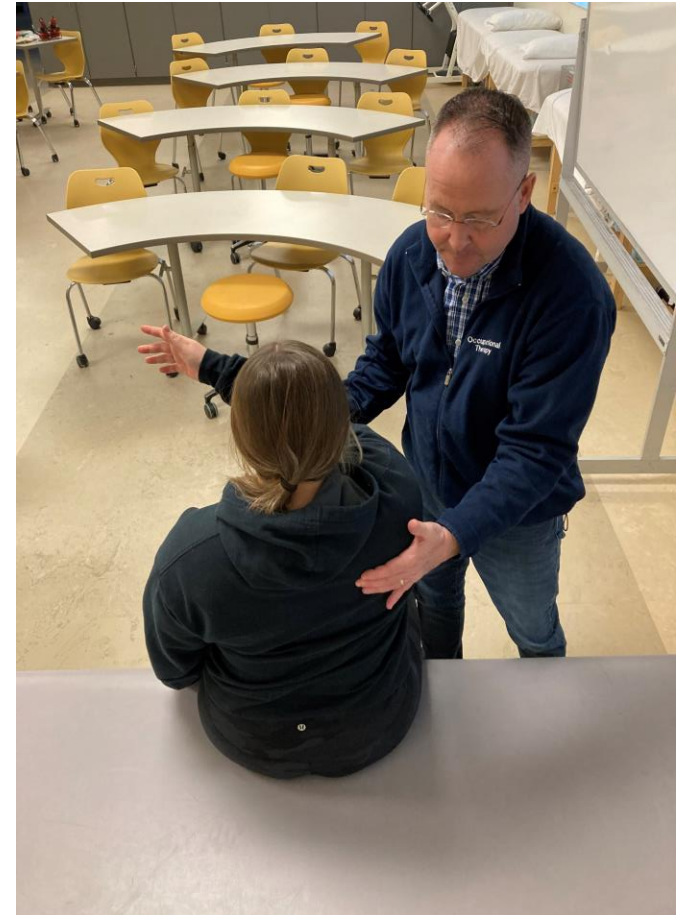
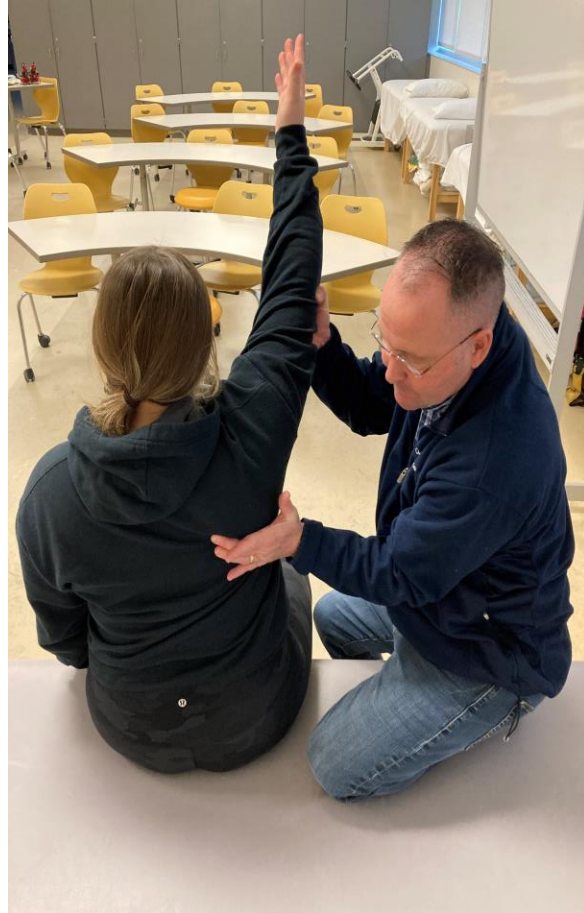
PREPARATORY METHODS SECTION



FOLLOW UP

- REFLEX INHIBITING PATTERN – IN OPPOSITE DIRECTION OF TYPICAL UPPER EXTREMITY FLEXOR SYNERGY.
- PERFORM ANATOMICAL MOTIONS OF THE UPPER EXTREMITY TO SHOULDER LEVEL ONLY, FLEXION, ABDUCTION, EXTERNAL ROTATION, INTERNAL ROTATION, HORIZONTAL ABDUCTION, HORIZONTAL ADDUCTION, EXTENSION. (1)
- NOW PERFORM CIRCUMDUCTION, “CIRCLES” OF THE SHOULDER AT SHOULDER LEVEL AND BELOW. (1)
- PROGRESS TO FUNCTIONAL PATTERNS OF MOTION, SUCH AS WHAT YOU ARE SEEING IS PNF PATTERN D1 FLEXION TO EXTENSION. (2)

PREPARATORY METHODS SECTION



FOLLOW UP

- SCAPULO-HUMERAL RHYTHM, PROM
- MAINTAIN CERVICO-THORACIC EXTENSION (GOOD POSTURE)
- GH FLEXION WITH SCAPULAR ELEVATION, UPWARD ROTATION AND PROTRACTION (1)
- GH ABDUCTION WITH SCAPULAR ELEVATION AND UPWARD ROTATION (2)
- GH HORIZONTAL ADDUCTION WITH SCAPULAR PROTRACTION/LATERAL GLIDE (3)
- NOT PICTURED, GH HORIZONTAL ABDUCTION WITH SCAPULAR ADDUCTION/RETRACTION/MEDIAL GLIDE

PREPARATORY METHODS SECTION



FOLLOW UP

- THE THREE ANATOMICAL MOTIONS NOTED, EXTENSION, EXTERNAL ROTATION AND HORIZONTAL ABDUCTION MAINTAIN THE SUPPLENESS OF THE ANTERIOR GLENOHUMERAL JOINT CAPSULE. THIS IS ONE IMPORTANT ASPECT IN PREVENTING HEMIPLEGIC SHOULDER PAIN. THE OTHER ASPECT IS PERFORMING COPIOUS AMOUNTS OF PROPER SCAPULAR MOBILIZATION AND PROPER SCAPULO-HUMERAL MOBILIZATION AS PREVIOUSLY ILLUSTRATED.

PREPARATORY METHODS SECTION



FOLLOW UP

- INCORPORATING BOTH SIDES OF THE BODY IS AN NDT APPROACH. NOT ONLY FACILITATING MOTION OF AFFECTED AND UNAFFECTED UPPER EXTREMITY BUT ALSO WORKING ON TRUNK STABILITY/MOBILITY, TRUNK ROTATION, CROSSING MIDLINE AND TRANSFERRING WEIGHT TO AFFECTED AND UNAFFECTED LOWER EXTREMITY.

PREPARATORY METHODS SECTION



FOLLOW UP

- “ROWING” IS A BRUNNSTROM TREATMENT STRATEGY IN THAT ONE IS ATTEMPTING TO FACILITATE AN ASSOCIATED REACTION. RESISTANCE IS APPLIED TO THE UNAFFECTED UPPER EXTREMITY IN AN ATTEMPT TO FACILITATE GREATER MOTION OUT OF THE AFFECTED UPPER EXTREMITY. WHERE MOTION CANNOT BE PRODUCED BY THE PATIENT, THE THERAPIST PROVIDES PASSIVE RANGE OF MOTION THROUGHOUT THE DESIRED RANGE OF MOTION OF ROWING.
- STARTING POSITION, AFFECTED RIGHT UPPER EXTREMITY ON TOP (1)

PREPARATORY METHODS SECTION



FOLLOW UP

- LOWER EXTREMITY IN REFLEX INHIBITING PATTERN WITH BOLSTER.
- BOBATH SELF RANGE OF MOTION, ALL ANATOMICAL MOTIONS OF THE SHOULDER, ELBOW, FOREARM AND WRIST. PRECAUTION IS ANYTHING ABOVE SHOULDER LEVEL – BE CERTAIN THE SCAPULA IS MOVING AS IT SHOULD WITH THE GLENOHUMERAL JOINT! (1)
- HEAVY JOINT COMPRESSION/APPROXIMATION IS FACILITATORY FOR CO-CONTRACTURE/STABILITY (2) – SHOULDER AT 70 DEGREES FLEXION FOLLOWED BY COMPRESSION. FOLLOW UP WITH (3)
- WORKING ON CO-CONTRACTURE/STABILITY BEFORE MOBILITY WITH SHOULDER AT 90 DEGREES FLEXION, STABILIZING THE ELBOW WITH AN AIR SPLINT. “Place and hold” technique. (3)

PREPARATORY METHODS SECTION



FOLLOW UP

- “Place and hold” bilaterally at 90 degrees for co-contraction. Followed by bilateral dynamic/isotonic (concentric/eccentric) motion with ball. Air splint supporting elbow.(1)
- Vibration to facilitate elbow extension. Therapist left hand placement is on the epicondyles of the elbow. Vibration is delivered from tricep insertion to tricep origin (distal to proximal). (2)
- Vibration to facilitate frontal plane abduction 70 degrees and above. This can be PROM/AAROM/AROM depending on patient. Vibration is applied from the distal deltoid tuberosity, to proximally through the middle deltoid.(3)
- This begins the isolated focus on the group II muscles.

PREPARATORY METHODS SECTION



FOLLOW UP

- Using associated reaction from non affected left UE (resistance to supination) to facilitate right forearm supination.

PREPARATORY METHODS SECTION



FOLLOW UP

- Facilitation of the wrist extensors. “Quick light stretch” to wrist extensors. This motion is in opposite direction of the desired movement of extension. Per PNF, this is phasic and reflexive in nature.(1)
- Follow up immediately with vibration or tapping to facilitate active wrist extension. Therapist’s left hand is on the styloids of the wrist. Vibration to the wrist extensors is distal to proximal. (2)
- Facilitation of the finger extensors. Therapist’s left hand is on the styloids. “Quick light stretch” to the finger extensors. This motion is in the opposite direction of the desired motion of finger extension. (3)

PREPARATORY METHODS SECTION



FOLLOW UP

- Following up from the previous slide, after “quick light stretch” is delivered to the finger extensors, immediately follow up with sensory input of tactile “quick light swipes”, distal to proximal, between the metacarpals. Facilitating finger extension. (1)
- Same can be achieved with the thumb for extension. Use “quick light stretch” (opposite direction of motion you are trying to achieve) immediately followed by “quick light swipes”, distal to proximal, along the dorsum of the first metacarpal.(2,3)
- Continued focus is on the Group II muscles, extensors, abductors, external rotators, supinator, upper trapezius.

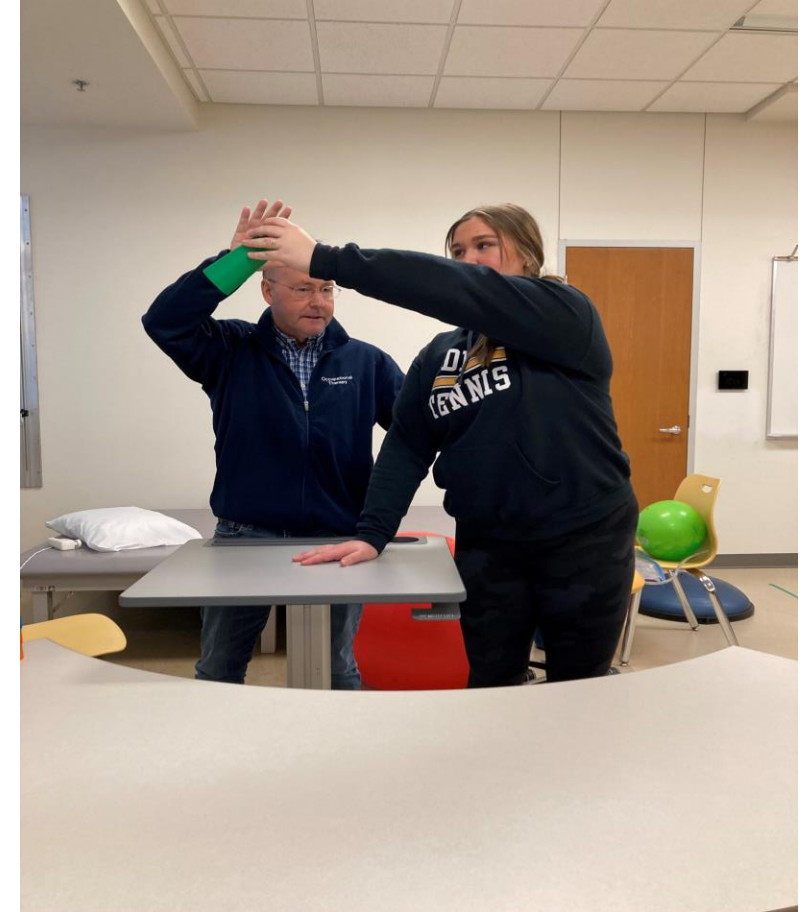
PREPARATORY METHODS SECTION



FOLLOW UP

- Sit to stand and Stand to sit
- This NDT approach takes place on the weak side. Key points of control: Therapist's left hand is on the patient's left hip; therapist's left shoulder is near patient's right scapula region; therapist's right hand is on the femur (2); Depending on patient status, fourth point of control may be the therapist's head near the anterior portion of the patient's left shoulder (3). This incorporates the weak side but from a functional perspective, transfers often need to occur to the strong side, then the weak side; Example would be in a small bathroom.
- Be certain patient's toes are not in front of her/his knees. Knees are typically flexed more than 90 degrees. If feet are not positioned properly, it may be the difference between maximal sit to stand and minimal sit to stand. Also, as the patient initiates standing, it is normal to encourage them with a physical cue and verbal cue to lean forward. Per Affolter, "In order to relearn normal movement, the patient needs to re-experience what normal movement feels like" and that occurs from the skilled help of the therapist.(1) (2,3)

PREPARATORY METHODS SECTION/Could be more Activity and/or more Occupation-Based



FOLLOW UP

- Working on static/dynamic standing balance, upper extremity range of motion, trunk rotation and weight shifting to right lower extremity.(1)
- PNF D1 extension to D1 flexion of the unaffected left U.E. This is encouraging weight bearing into the affected right U.E., trunk rotation and weight shifting of the lower extremities. This can be better performed perhaps in the ADL kitchen, using the countertop and cupboards.(2,3)

PREPARATORY METHODS SECTION/Could be more Activity and/or more Occupation-Based



FOLLOW UP

- Same objectives as previous slide.
- This is PNF D2 flexion to D2 extension. May be best achieved in a naturalistic context, such as previously noted in the ADL kitchen.

PREPARATORY METHODS and/or ACTIVITY and/or OCCUPATION-BASED SECTION



FOLLOW UP

- Affolter “Guiding” Approach
- Key points of control: 3rd metacarpal, styloids and therapist’s right ulnar hand secures patient’s ulnar hand/wrist. Therapist’s left hand supports tricep area of arm or epicondyles of the humerus at elbow. (1,2)
- Facilitate wrist flexion to open hand drop object from radial hand and extend wrist to close hand and secure object with radial hand.(1,2)
- Work (reach) away from synergy.(1,2)
- Can be used functionally, for example securing finger foods when eating. Could be used to facilitate grasping silverware, brushes, toothbrushes, etcetera.

PREPARATORY METHODS and/or ACTIVITY SECTION



FOLLOW UP

- Deltoid Aide can be used, especially when proximal upper extremity strength is less than 3-/5, where assistance is needed.

ACTIVITIES STAGE SECTION



FOLLOW UP

- A plethora of table top activities can be used when the patient has reached a Brunnstrom stage 4. This is where they can voluntarily move away from synergy very grossly. There is some voluntary active shoulder, elbow, forearm, wrist and hand active movement away from synergy.
- Typically considered low contextual interference where one is working on a few skills (shoulder flexion, elbow extension, grasp/release) within one simple task. Selecting the correct activity for the “just right challenge” is obviously important.

OCCUPATION-BASED SECTION



FOLLOW UP

- Occupation-Based therapy can be from a rehabilitative frame of reference, where the patient is using compensatory approaches and assistive devices to eat, bathe, dress, etcetera.
- Occupation-Based approach can be used from a neurodevelopmental perspective: Using one's affected upper extremity in the context of their everyday activities and routines. This is especially valuable with Brunnstrom 4 and especially Brunnstrom 5 and 6 levels of motor control and performance.

NDT TRANSFER TO AFFECTED SIDE



FOLLOW UP

- This is a minimal and moderate “Bobath” NDT transfer, obviously to the weak side, to incorporate the entire body. From a functional perspective, patients often need to be able to transfer toward their strong side but also toward their weak side. Example, transferring to and off a commode within a small bathroom. (1,2,3)
- Notice the entire body, to include the upper extremity, trunk and lower extremity are in a reflex inhibiting pattern. “One cannot impose normal movement on abnormal muscle tone” thus for the reflex inhibiting pattern.(1,2,3)
- The therapist’s key points of control are lateral scapulae with thumbs on the inferior angle of the scapulae.(1,2,3)