




# Core Mobility and Stability

## Trunk Asymmetry in Bed or Wheelchair

- Be careful when patient is not ambulatory because of difficult positioning in a wheelchair
  - Extra time should be spent on wheelchair positioning to prevent musculoskeletal and perceptual secondary impairments\

## Assessment

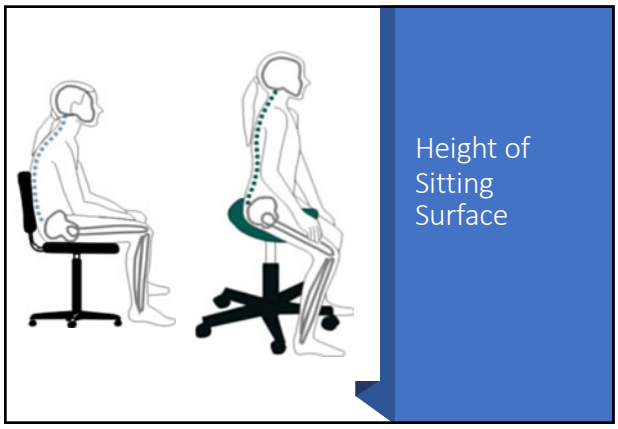
**Observations**

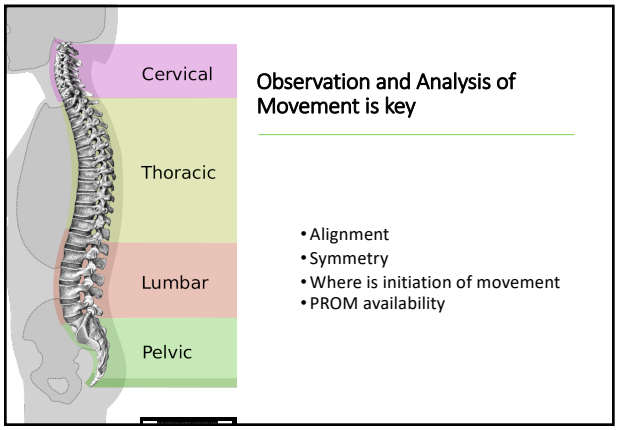
- Why are they doing that?

**Look at their static & dynamic position**

- Alignment of the head, trunk, rib cage, UEs, LEs
- Note atypical patterns and common tendencies

**Perform evaluation through function**


Height of Sitting Surface


Cervical
Thoracic
Lumbar
Pelvic
Observation and Analysis of Movement is key
• Alignment
• Symmetry
• Where is initiation of movement
• PROM availability


Many Ways to Activate Trunk

## Sidelying PNF Pelvic Patterns

| | Anterior Elevation | Posterior Depression |
|---|---|---|
| Manual Contacts | Iliac Crest, on and just anterior to midline Hands overlapped, lumbrical grip | Ischial tuberosity, hands overlapped, use proximal carpal ridge |
| Verbal Commands | "Shrug your pelvis up, pull up" | "Sit into my hand, push" |

• Sharma V, Kaur J. Effect of core strengthening with pelvic proprioceptive neuromuscular facilitation on trunk, balance, gait, and function in chronic stroke. Journal of exercise rehabilitation. 2017 Apr;13(2):200.

Sitting

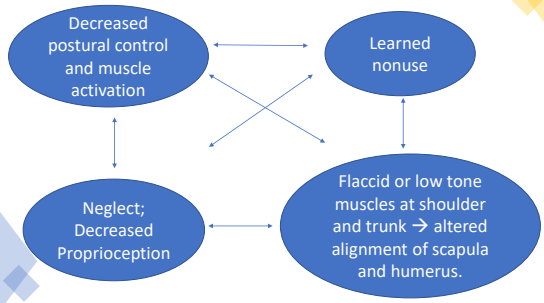
# CORE STRENGTHENING

# Low Tone Positioning and Shoulder Subluxation I

**Steve Page, OT/L, PhD, MS, MOT**
SPage@Neurorecovery.net
StevePRehab
DR. STEPHEN PAGE
StevePRehab.com

1

## What causes – **and sustains** – poor positioning?




2

## Early UE/Shoulder Positioning is Important

- In the **initial days-weeks post stroke, 90% of survivors exhibit hypotonia/flaccidity**
- Poor positioning causes decreased symmetry, **sitting balance**, and poor (suboptimal?) activity performance
- LEARNED NONUSE happens quickly and in multiple mm groups
- "Hypotonic shoulders" are highly susceptible to damage of the structures surrounding the shoulder (muscles, tendons, ligaments)

3

## SLINGS AND OTHER AIDS ***FOR SUPPORT AND POSITIONING:***

Joint protection strategies - *used AT ANY STAGE of recovery* to prevent or minimize shoulder pain.

- Positioning and supporting the arm *during rest* [Evidence Level A].
- Protecting and supporting the arm *during functional mobility* [Evidence Level B].
- Protecting and supporting the arm *during wheelchair use or transfers* by using a hemi-tray or arm trough [Evidence Level B].

*During the flaccid stage* slings can be used **to prevent injury**; however, **beyond the flaccid stage the use of slings is controversial**.

Canadian Stroke Strategy

4

## ***But First…*** **Optimize Position**

"Poor positioning causes decreased symmetry, **sitting balance**, and poor (suboptimal?) activity performance"


5

*Which* sling or support can I use for support and transfers? (see lesson for handout)

PILLOWS

PROS: Abundant; Pliable; Many sizes; useful in Side Lying or sitting

CONS: May not maintain or approximate appropriate shoulder position; Not useful while standing.

Variations: wedges; lateral arm supports (w/c)

6

## *Which* sling…for support and transfers?
Hemi-Sling

WHAT: Sling that supports UE across body and underneath elbow w strap near or around neck

PROS: Abundant; Keeps UE across body during transfers; Good for patients w neglect; May assist w balance (1)

CONS: Does not approximate position in humerus; May facilitate learned nonuse; deconditioning; poor arm swing

Alt: Fanny pack; Scarf

7

## Humeral "Cuff" Slings

WHAT: Humeral cuff that is held in place by adjustable straps, either around body or proximal to cuff.

PROS: Approximates humerus position; some allow UE swing; worn under or over clothes; adjustable; some allow distal UE use; Can integrate modalities with some types

CONS: limits shoulder mobility (e.g., external/internal rotation); tricky to don – requires practice!

Neurexa shoulder orthosis (Walmart)

Ali-Med Hemi Shoulder sling

OmoTrain shoulder brace

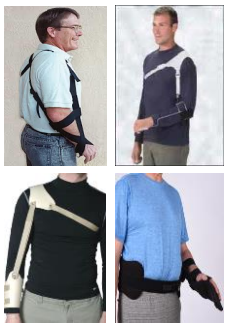
8

## Distal Support Slings

WHAT: Supports UE distally; uses weight of the patient's forearm as a counterbalance to maintain positioning between the humerus and the shoulder joint (GHJ)

PROS: Approximates humerus position in some pts; adjustable; SOME allow distal UE use at different areas of the UE; Can integrate modalities

CONS: May discourage arm swing; If hemiparesis is dense, may not effectively approximate shoulder; May restrict distal UE use; May encourage synergy



AliMed shoulder saddle sling

9

## Do you "like" the Giv-Mohr?

- Unweights the UE
- Provides distal input
- If the arm "rolls" use a thin splint (air splint?) to keep it in neutral

"Be careful of balance; the changes in arm swing may throw it off. Work on proximal stability and train them with it."

Givmohrsling.com: ≈ $72.00
Alimed: ≈ $78.00
Amazon: ≈ $86.00

10

## SLINGS AND OTHER AIDS (e.g., lap boards) *AS A RESTORATIVE TX*

**MOTOR FUNCTION**

| LoE | Conclusion Statement | RCTs | References |
|---|---|---|---|
| 1b | **Sustained positioning** may not have a difference in efficacy when compared to **conventional therapy** for improving motor function. | 1 | De Jong et al. 2006 |
| 1b | **Continuous passive range of motion exercises** may not have a difference in efficacy when compared to **self-directed range of motion exercise** for improving motor function. | 1 | Lynch et al. 2005 |

**SPASTICITY**

| LoE | Conclusion Statement | RCTs | References |
|---|---|---|---|
| 1a | **Sustained or static positioning** may not have a difference in efficacy when compared to **conventional therapy** for improving spasticity. | 3 | De Jong et al. 2006; Ada et al. 2005; Turton & Britton 2005 |
| 1b | **Continuous passive range of motion exercise** may not have a difference in efficacy when compared to **self-directed range of motion exercise** for improving spasticity. | 1 | Lynch et al. 2005 |

**RANGE OF MOTION**

| LoE | Conclusion Statement | RCTs | References |
|---|---|---|---|
| 1a | **Sustained or static positioning** may not have a difference in efficacy when compared to **conventional therapy** for improving range of motion. | 5 | De Jong et al. 2006; Gustafsson & McKenna 2006; Ada et al. 2005; Turton & Britton 2005; Dean et al 2000 |

11

## SLINGS *AS THERAPY*

- Immobilization increases the risk of other pain syndromes including adhesive capsulitis and joint contracture and should be avoided (Dohle, 2013).
- May encourage flexor synergies, inhibit arm swing, contributing to contracture formation.
  - GIVE-MOHR: Good for maintaining arm swing; ADL participation???
- Slings are likely not beneficial for shoulder hemiplegia following stroke. (Ada et al., 2016; van Bladel et al., 2017)
- Ada et al, Cochrane Database Systematic Review: "There is insufficient evidence that to conclude whether slings and wheelchair attachments prevent subluxation, decrease pain, increase function or adversely increase contracture in the shoulder after stroke"
- Bladel et al., 2017, sling vs no sling, 6-week duration

"The control group (no sling) showed the least amount of shoulder subluxation. There were no significant differences between groups for pain, PROM, spasticity, or function between groups."

**EBRSR: "Slings are likely not beneficial for shoulder hemiplegia following stroke"**

12

# The Big Winner?
## Acupuncture/Acupressure

**ACUPUNCTURE:**

- 4 major RCTs across approx. 500 subjects between 2013 and 2017
- 3-5x/week for 2 wks.

**ACUPRESSURE:**

- Similar effects and LoE but fewer RCTs

**MOTOR FUNCTION**

| LoE | Conclusion Statement | RCTs | References |
|---|---|---|---|
| 1b | **Acupuncture with herbal therapy** may produce greater improvements in motor function than **acupuncture.** | 1 | Seo et al. 2013 |

**SPASTICITY**

| LoE | Conclusion Statement | RCTs | References |
|---|---|---|---|
| 1b | **Acupuncture** may produce greater improvements in spasticity than **conventional therapy** | 1 | Mendiguta-Gomez et al. 2016 |

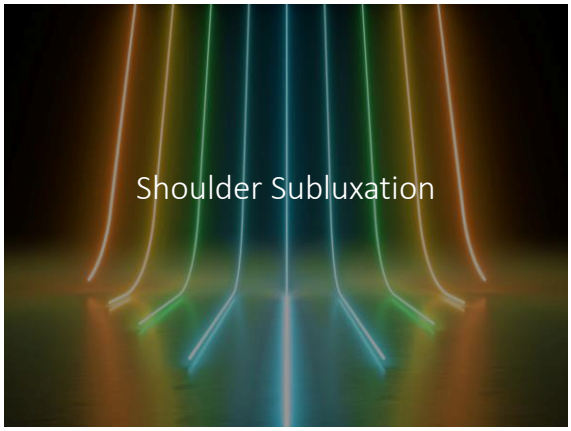
**RANGE OF MOTION**

| LoE | Conclusion Statement | RCTs | References |
|---|---|---|---|
| 1a | **Acupuncture** may produce greater improvements in range of motion than **conventional therapy** | 2 | Mendiguta-Gomez et al. 2016; Zhao et al. 2015 |
| 2 | **Superficial needling acupuncture with club swing** may produce greater improvements in range of motion than **conventional therapy.** | 1 | Ni et al. 2017 |

**PAIN**

| LoE | Conclusion Statement | RCTs | References |
|---|---|---|---|
| 1a | **Acupuncture** may produce greater reductions in pain than **conventional therapy.** | 2 | Mendiguta-Gomez et al. 2016; Zhao et al. 2015 |
| 1b | **Acupuncture with herbal therapy** may produce greater reductions in pain than **acupuncture.** | 1 | Seo et al. 2013 |
| 2 | **Superficial needling acupuncture with club swing** may produce greater reductions in pain than **conventional therapy.** | 1 | Ni et al. 2017 |

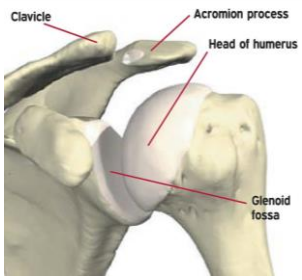
13




14

## Why Shoulder Subluxation? The Key Players…

- Ball and socket between the humeral head and **shallow** glenoid fossa.
- Major joint connecting the upper limb to the axial skeleton
- Mobility > stability




15

## Shoulder Subluxation Assessment

Palpation/Fingerbreadth method (Hall et al., *Am J Occ Ther;* 1995)

Fingerbreadth Palpation Method

Good intrarater reliability (ICC=.980) and discriminant validity (Kumar, et al., 2011);

**Moderate** inter-rater reliability (0.79)

**Cannot detect small sublux < .05 cm**

Ultrasound: More sensitive (Kumar et al., 2011; Lee IS, et al., 2009; Huang et al., 2012)

16

## QUESTIONS?

**Steve Page, OT/L, PhD, MS, MOT**

SPage@neurorecovery.net

www.StevePRehab.com

StevePRehab

17

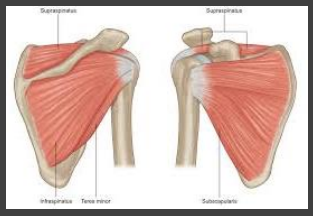
## Potential predictors of upper extremity recovery

- **Active finger extension** was found to be a strong predictor of short, medium, and long-term post-stroke recovery (Smania et al. 2007).
- **Minimal shoulder abduction and upper motor control of the paretic limb upon admission to rehabilitation** had a reasonably good chance of regaining some hand capacity whereas patients without proximal arm control had a poor prognosis for regaining hand capacity (Houwink et al. 2013).
- The EPOS study demonstrated that **patients with some finger extension and shoulder abduction on Day 2 after stroke onset had a 98% probability of achieving some degree of dexterity at 6 months**; this was in contrast to only 25% in those who did not show similar voluntary motor control.
- In addition, **at 6 months 60% of patients with finger extension within 72 hours had regained full recovery of upper limb function** according to ARAT score. (Nijland et al. 2010).

EBRSR 2016

1

## Stretching and mobilizing for scapular mobility



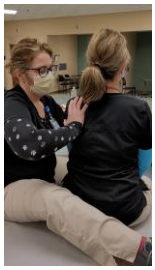

- Kumar R, Metter EJ, Mehta AJ, Chew T. Shoulder pain in hemiplegia. The role of exercise. Am J Phys Med Rehabil. 1990 Aug;69(4):205-8. doi: 10.1097/00002060-199008000-00007. PMID: 2383382.

2

## Scapular Elevation

- Approximate scapula and humerus
- Perform scapular elevation with inferior angle between therapist's thenar and hypothenar eminence of hand
- Have pt. move into posterior pelvic tilt "Slouch and touch your chin to your chest"

3



4

## Scapular Depression

– Approximate scapula and humerus

– Therapist places fingertips on patient's spine of scapula

– Have patient move head in lateral direction away from you. Ear on non-involved side to shoulder on non-involved side

5

6


## Scapular Retraction

- Approximate scapula and humerus
- Therapist has patient's axillary in web space between fingers and thumb
- Perform adduction and maintain hold
- Ask pt. to slowly turn head in opposite direction
- For additional stretch ask patient to place opposite hand opposite hip with thumb pointing down

7

8

## Scapular Protraction

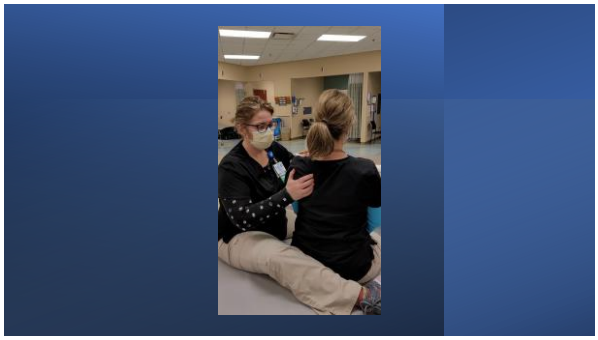
– Approximate scapula and humerus

– Therapist places PIP's onto medial border

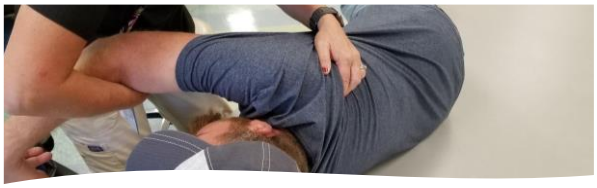
– Perform Abduction and maintain

– Ask pt. to slowly turn head toward therapist and reach for therapist's shoulder

9



10



Upward Rotation

–Patient side lying on unaffected side

– Approximate scapula and humerus and support upper limb

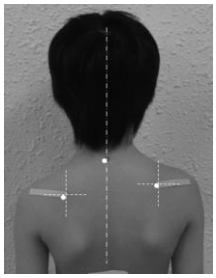
– Therapist places PIPs on medial border by inferior angle

– Perform upward rotation and hold

11

12

What stretch does the left scapula need?

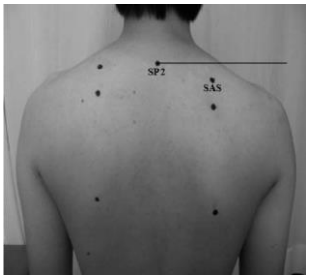


13

What stretch does the right scapula need?

14

Which stretches would you do to the right scapula?

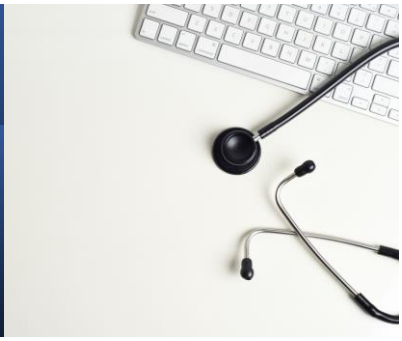



15

Which stretches would you do to the left scapula?

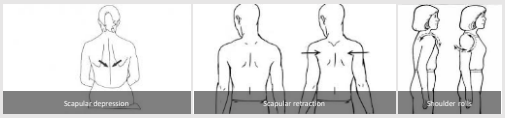
16

## Intervention for scapular stabilization

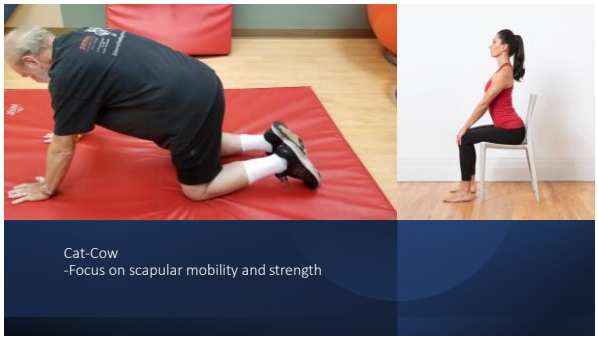


17

## Start early




18



Cat-Cow
-Focus on scapular mobility and strength

19

-Position patient standing with elbows and forearms against a wall

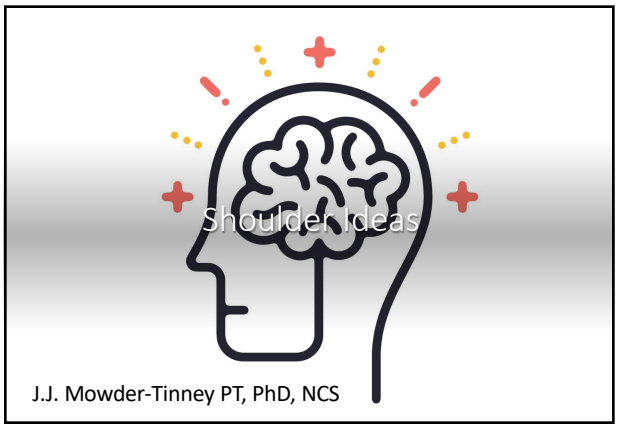
-cue for scapular depression and retraction

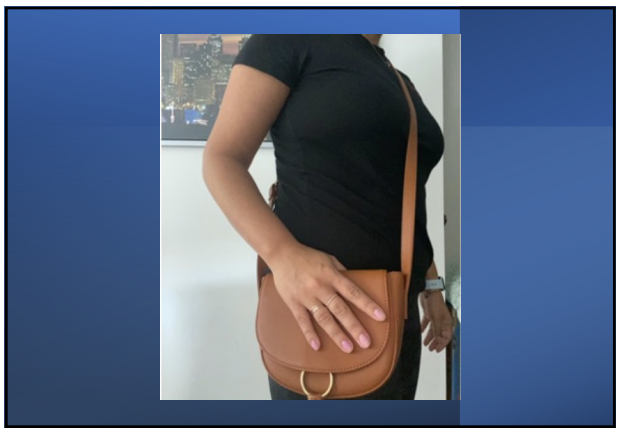
-Patient to slide forearms up and down the wall maintaining scapular position

-keep arms parallel through entire exercise

20

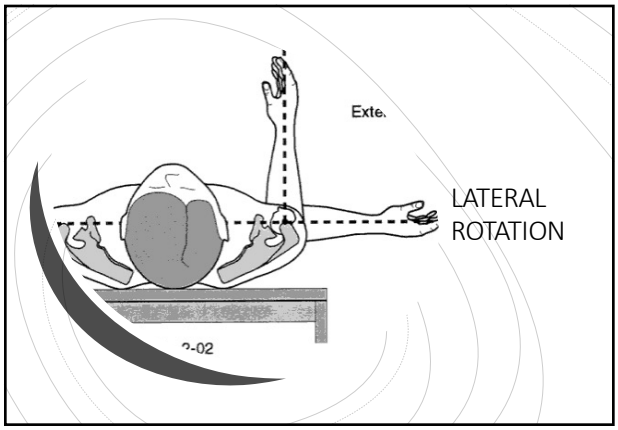

21

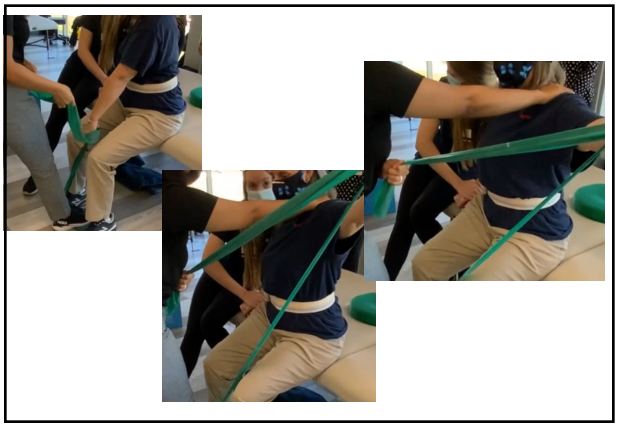

Shoulder Ideas
J.J. Mowder-Tinney PT, PhD, NCS



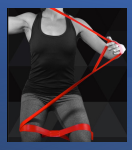
However you prefer to mobilize the scapula is great!

Just check its position and mobilize first

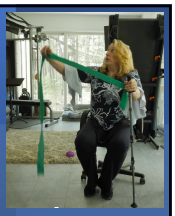


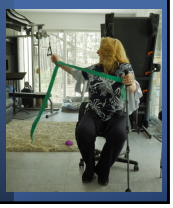



MAKE IT EASIER BY PLACING THEIR ARMS ON THE TABLE TO DECREASE DEGREES OF FREEDOM



Theraband CLX



Activator Poles: https://urbanpoling.com/about-us/

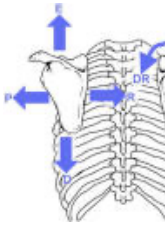
## Movement Initiation

Where is movement initiated when reaching?

To retrain the UE, consider the following:

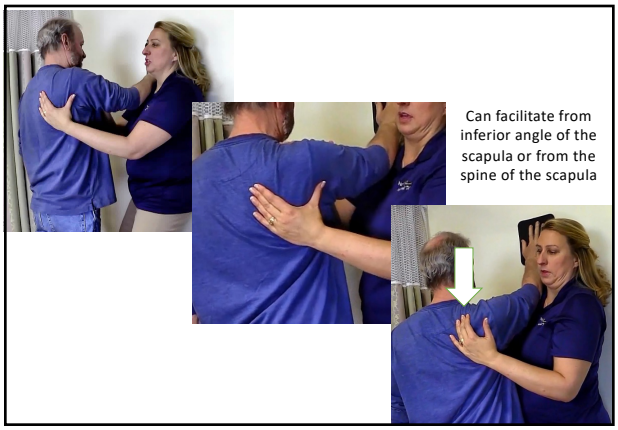
- Maintain the shoulder in alignment
- Understand the normal movement components of the activity being trained – distal movement first
- Facilitate the scapula into proper upward rotation

## Scapular Upward Rotation

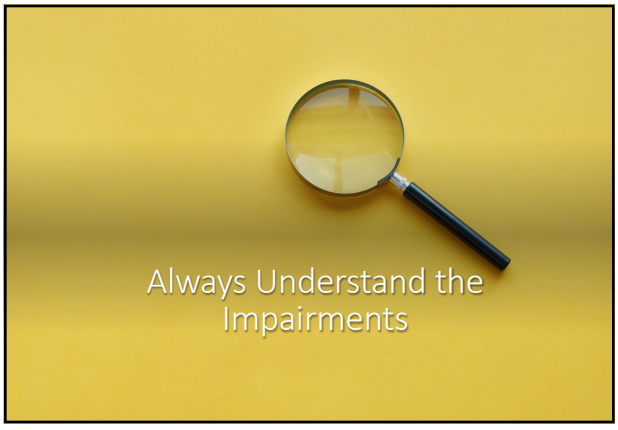


**Muscle imbalances**

- Deltoid/rotators
- Serratus/upper & lower trapezius
  - Overuse of upper trapezius
  - Elevated scapula & loss of upward rotation resulting in tightness



Can facilitate from inferior angle of the scapula or from the spine of the scapula

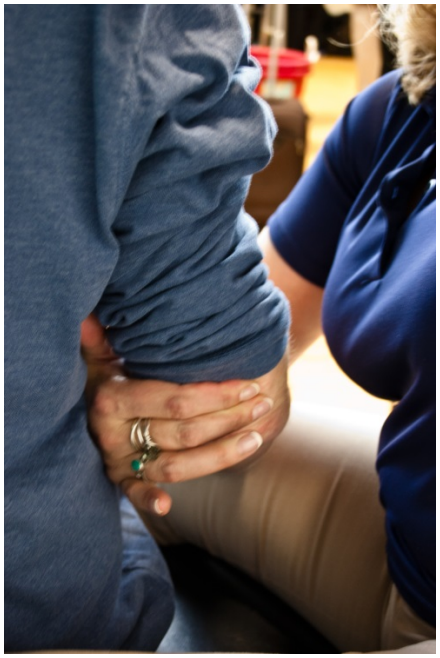


# Supplemental Handout

**JJ Mowder-Tinney PT, PhD, NCS, C/NDT, CSRS, CEEAA**
**jjmowder@gmail.com**

## Facilitating External Rotation in Closed Chain – Moving Body on UE

Provide a surface to place the hand in a closed chain position while maintaining alignment.

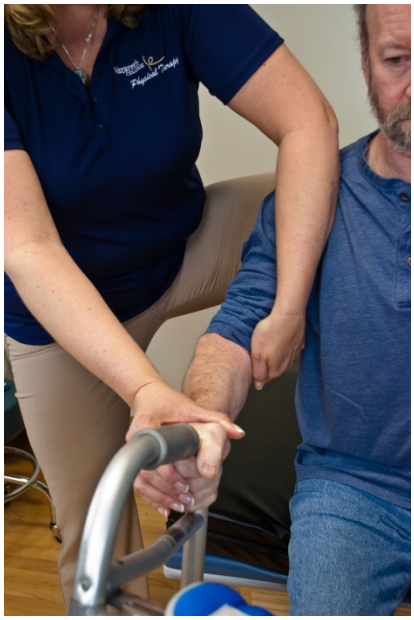


Provide pressure through the triceps tendon down into the hand to increased sensory input and facilitate the push.

The back leg can be used to maintain trunk alignment and the pelvis into an anterior pelvic tilt.

Rotate opposite arm and out to the side along with the head.

# Facilitating UE Activity in Closed Chain w/ Visual Cues



Utilize some external cue to provide a visual of activation of the UE. This can be tipping a chair, ironing board, ladder, walker, or pvc piping.

The back leg can be used to maintain trunk alignment and the pelvis into an anterior pelvic tilt and thoracic extension.

Provide pressure through the triceps tendon down into the hand to increased sensory input and facilitate the push.

Allow tipping of the object. Progress to adjusting the position and the sequence.

# Scapular Upward Rotation Mobility

Place hand on wall on an object to allow sliding. Stand in front and place arm on shoulder to take away gravity and tendency to elevate shoulder.

Find the spine of the scapule to make sure that elevation is not taking place.

Slide the hand up the wall making sure the movement is facilitated distally.

Repeat the up and down movement to retrain the motion.

# Documentation Options

Make sure to include the **position** of the patient, the **activity** being performed, the **assist** (both amount and location), and any **equipment** used. Incorporate number of reps OR time performed with each.

| Activity | Documentation |
|---|---|
| **Scapular Mobility** | Patient in short sitting (or can be done in standing) actively moving unimpaired arm in all planes of motion with head and eyes tracking hand movement. Therapist is maintaining impaired scapula in alignment and stationary with hands over body of scapula and anterior to acromion.(Add laundry activity, or wiping down mat, or putting away dishes if using environment) |
| **External Rotation** | Patient in short sitting actively moving unimpaired arm in all planes of motion with head and eyes tracking hand movement. Therapist has impaired arm extended and on knee (or whatever object you use) to place hand in closed chain position facilitating extension at triceps tendon and alignment of trunk in neutral with hands and knee. |
| **UE Activation** | Patient is in short sitting with both hands (or impaired hand only) on tipped walker (or whatever piece of equipment you are using) pushing and pulling object back and forth. Therapist maintains trunk alignment and anterior pelvic tilt with back leg, maintains shoulder in alignment and facilitates triceps tendon with moderate assist of one hand and maintains patient hand on device with second hand. |
| **Scapula Upward Rotation** | Patient is in standing facing wall with impaired hand on wall in hand piece (or mouse pad, or towel) sliding hand up and down wall. Therapist has back against wall facing patient to support arm. One hand is inhibiting upper trapezius activation with second hand on spine of scapula (or inferior angle of scapula) facilitating upward rotation of scapula while pushing up the wall) |

# Low Tone Positioning and Shoulder Subluxation II

**Steve Page, OT/L, PhD, MS, MOT**
SPage@Neurorecovery.net
StevePRehab
DR. STEPHEN PAGE
StevePRehab.com

1

## General Rules of Thumb

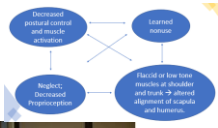
- Incorporate **functional/meaningful/avocational objects and/or activities at all points**
- *If patient has no volitional movement*, passively move the limb through the movement, encouraging participant to assist as able toward a target. *Do not just range.*

Grade up when ≈ 6-7/10 successful attempts (ICARE; ExCITE)

2

## Sitting balance progression

***What muscles will she use?***




Ipsalateral anterior nonparetic

Ipsalateral posterior nonparetic

Personal collection of Steve Page; consent obtained and on file

3

## Sitting balance progression

***How can I increase challenge?***
***(eg, change height of chair)***

Ipsalateral anterior nonparetic

**Try to attain trunk flexion;**

**Push back against your hand as they return to extension**

Ipsalateral posterior nonparetic

Personal collection of Steve Page; consent obtained and on file

4

## Sitting balance progression:

Stabilize @ the elbow and wrist →
A single functional unit & control at the shoulder

Contralateral anterior paretic

Contralateral posterior paretic

IMAK Pillo Splint

LQO Adult Elbow Fixation stabilizer

Personal collection of Steve Page; consent obtained and on file

5

## Sitting balance progression (cont'd.)

Contralateral anterior nonparetic

Contralateral posterior nonparetic

Personal collection of Steve Page; consent obtained and on file

6

## Sitting balance progression (cont'd.)

Ipsalateral anterior paretic

Ipsalateral posterior paretic)

Personal collection of Steve Page; consent obtained and on file

7

**Progress to sidelying**

**Progress to sitting up; UE w full gravity w assistance**

High-low table

Shoulder flexion, Gravity eliminated

Elbow flexion, Gravity eliminated

Personal collection of Steve Page; consent obtained and on file

8

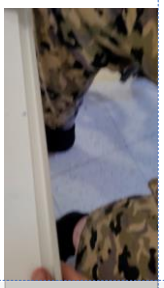
## Upgrading or Downgrading?

9

Upgrading or Downgrading ?

10

Upgrading or Downgrading?



11

# Distally-based UE Motor Strategies

1

## Who is "Distally-based"

Individuals in this group can moderately (at least):

- Participate in motor therapies
- Learn new information
- Learn from intrinsic and extrinsic feedback, and from results (KR)
- Retain new information over time
- Show insight about their functional limitations

Effective strategies for this group (should) feature learning and skill acquisition that incorporates/encourages:

| | |
|---|---|
| Repetitive, active attempts | Homework |
| Active (forced?) exploration | Use of high-meaning activities |
| Open practice environments | Paretic UE Use |
| Overload & Specificity | Patient involvement & self-direction |

2


3

## Distally-Based UE Strategies

- CIT/mCIT
  - 30 mins to multiple hours of repetitive UE clinical practice
  - Sustained practice at home for hours at a time

  (Duration and Frequency that are necessary???)

  - REQUIRES "10x10x10"
  - HOME PRACTICE REQUIRES: INSIGHT, DISCIPLINE, SAFETY, ACTIVITY TOLERANCE

4

## The Grasp Protocol

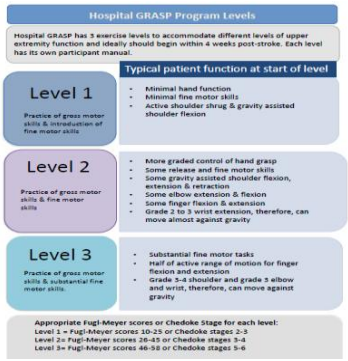
- Can be performed by patient as homework, *without direct supervision* (indirect supervision recommended)
- 3 levels of exercises to accommodate level of impairment
- 1 hour/day
- Manualized

**GRASP**
**G**raded
**R**epetitive
**A**rm
**S**upplementary
**P**rogram

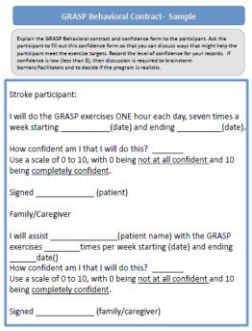
https://neurorehab.med.ubc.ca/grasp/

5

## Selection of appropriate patients for GRASP




6



GRASP Behavioral Contract- Sample

Explain the GRASP Behavioral contract and confidence form to the participant. Ask the participant to fill out this confidence form so that you can discuss ways that might help the participant meet the exercise targets. Record the level of confidence for your records. If confidence is low (less than 8), then discussion is required to brainstorm barriers/facilitators and to decide if the program is realistic.

Stroke participant:

I will do the GRASP exercises ONE hour each day, seven times a week starting _____(date) and ending _____(date).

How confident am I that I will do this? _____
Use a scale of 0 to 10, with 0 being not at all confident and 10 being completely confident.

Signed _____ (patient)

Family/Caregiver

I will assist _____(patient name) with the GRASP exercises _____times per week starting (date) and ending _____date()
How confident am I that I will do this? _____
Use a scale of 0 to 10, with 0 being not at all confident and 10 being completely confident.

Signed _____ (family/caregiver)

https://neurorehab.med.ubc.ca/grasp/grasp-manuals-and-resources/

7


Grading Overview

These exercises need to be challenging to the participant to improve brain function. For instance, if the participant completes the hand exercise without making any mistakes, such as mishandling or dropping the object, the exercises need to be made more difficult. See below for some ideas of how to make the exercises more challenging:

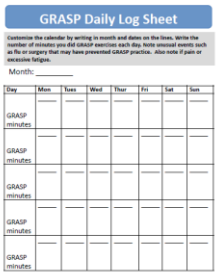
Use smaller objects for the fine motor exercises

Use toothpicks instead of popsicle sticks

Use smaller pegs

Use smaller coins, lego or blocks

Use various sized objects for the exercises. For instance, a variety of jars with different mouth sizes (eg. Narrow, wide)

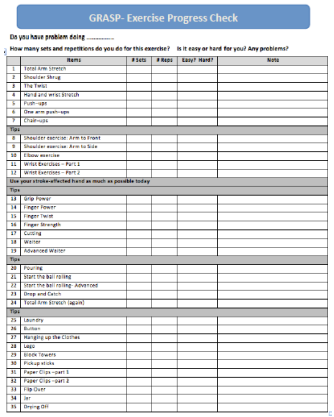

GRASP Daily Log Sheet

Customize the calendar by writing in month and dates on the lines. Write the number of minutes you did GRASP exercises each day. Note unusual events such as flu or surgery that may have prevented GRASP practice. Also note if pain or excessive fatigue.

Month: _____

| Day | Mon | Tues | Wed | Thur | Fri | Sat | Sun |
|---|---|---|---|---|---|---|---|
| GRASP minutes | | | | | | | |
| GRASP minutes | | | | | | | |
| GRASP minutes | | | | | | | |
| GRASP minutes | | | | | | | |
| GRASP minutes | | | | | | | |

8


GRASP- Exercise Progress Check

Do you have problem doing _____

How many sets and repetitions do you do for this exercise? Is it easy or hard for you? Any problems?

| | Name | # Sets | # Reps | Easy? Hard? | Note |
|---|---|---|---|---|---|
| 1 | Total Arm Stretch | | | | |
| 2 | Shoulder Shrug | | | | |
| 3 | Thy Twist | | | | |
| 4 | Hand and wrist Stretch | | | | |
| 5 | Push-ups | | | | |
| 6 | One arm push-ups | | | | |
| 7 | Chair-ups | | | | |
| Title | | | | | |
| 8 | Shoulder exercise: Arm to Front | | | | |
| 9 | Shoulder exercise: Arm to Side | | | | |
| 10 | Elbow exercise | | | | |
| 11 | Wrist Exercises – Part 1 | | | | |
| 12 | Wrist Exercises – Part 2 | | | | |
| Use your stroke-affected hand as much as possible today | | | | | |
| Title | | | | | |
| 13 | Grip Power | | | | |
| 14 | Finger Power | | | | |
| 15 | Finger Twist | | | | |
| 16 | Finger Strength | | | | |
| 17 | Cutting | | | | |
| 18 | Writer | | | | |
| 19 | Advanced Writer | | | | |
| Title | | | | | |
| 20 | Pouring | | | | |
| 21 | Start the Ball rolling | | | | |
| 22 | Start the ball rolling- Advanced | | | | |
| 23 | Drop and Catch | | | | |
| 24 | Total Arm Stretch (again) | | | | |
| Title | | | | | |
| 25 | Laundry | | | | |
| 26 | Buttons | | | | |
| 27 | Hanging up the Clothes | | | | |
| 28 | Lego | | | | |
| 29 | Block Towers | | | | |
| 30 | Pick-up sticks | | | | |
| 31 | Paper Clips – part 1 | | | | |
| 32 | Paper Clips – part 2 | | | | |
| 33 | Flip Over | | | | |
| 34 | Jar | | | | |
| 35 | Drying Off | | | | |

9

Review > Top Stroke Rehabil. 2016 Apr;23(2):116-25. doi: 10.1179/1945511915Y.0000000007. Epub 2016 Feb 8.

**Error augmentation as a possible technique for improving upper extremity motor performance after a stroke – a systematic review**

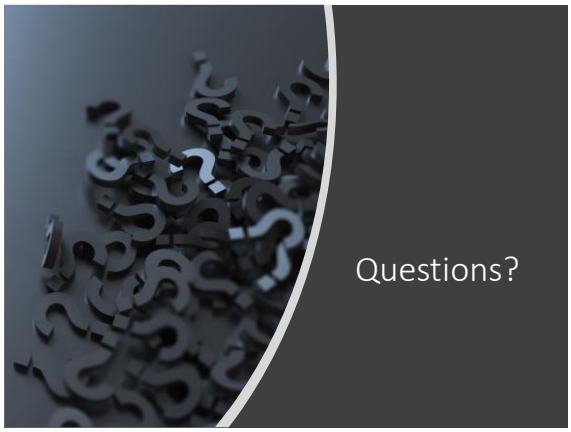
Sharon Israely [1], Eli Carmeli [1]

Affiliations + expand

PMID: 26382572 DOI: 10.1179/1945511915Y.0000000007

- Finger weights
- Weighted gloves
- Pulling them into error (wrong plane; use a theraband or manual resistance to pull them posterior)
- Trunk restraint (bending and reaching – god or bad??)

10




11

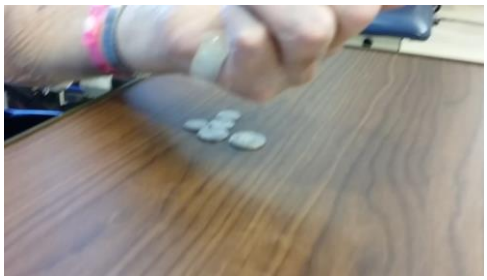
# FMC and in hand manipulation

1

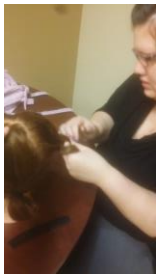
## In hand Manipulation Skills

| Finger to palm Translation | Palm to finger translation | Shift | Complex rotation | Simple rotation |
|---|---|---|---|---|
| Moving items from fingertips to palm<br>• picking up coins from table and placing them in the palm | Moving items from palm to fingertips<br>• putting a handful of coins into a vending machine one at a time | Moving things in a linear motion with fingertips<br>• scooting a pencil up and down while holding it<br>• fanning out cards in the hand to see them | Turning an object from end to end within the hand<br>• Flipping a pencil from writing end to eraser | The ability to turn or roll an object between the pads of the fingers and thumb no more than 90 degrees<br>• Unscrewing the cap of a water bottle |

2



3



4

- Crumpling paper
- Self feeding small snacks/foods
- Coloring with a broken crayon
- Wringing out washcloths
- Tapping fingers to a beat
- Craft projects
- Shuffling cards
- Rotate golf balls in palm
- Use fidgets

5