Minimizing Arm Pain: Get on Board the SHiPP

Chris Pollard

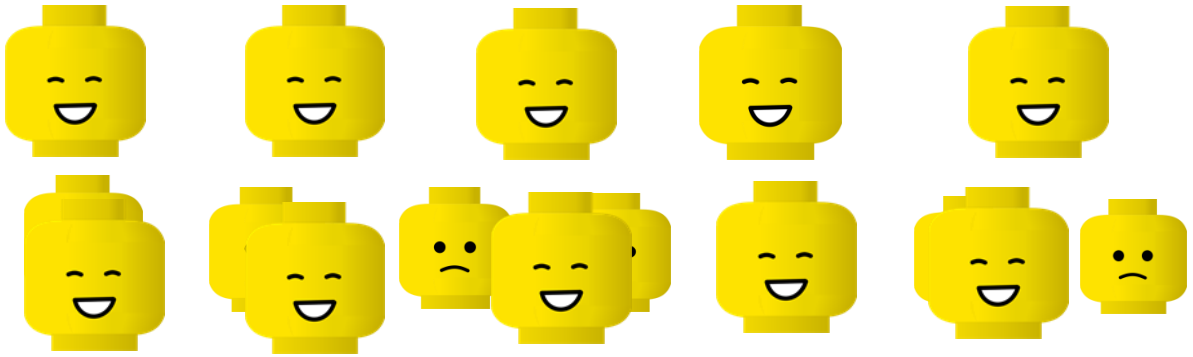
2015

Hotel Dieu Shaver
HEALTH AND REHABILITATION CENTRE

Arm Pain –
What's the Big Deal?

Arm Pain…
What's the Big Deal?

- Incidence



- Impact

- Limits Participation
- Poorer functional recovery/mask improvement
- Depression
- Sleeplessness
- QOL

Cause(s)?

Anatomical Site	Mechanism
Muscle	Rotator Cuff, Muscle Imbalance, Subscapularis or Pectoralis Spasticity
Bone	Humeral Fracture
Joint	Glenohumeral Subluxation
Bursa	Bursitis
Tendon	Tendinitis
Joint Capsule	Frozen or Contracted Shoulder (adhesive capsulitis)
Other	Shoulder-hand Syndrome (RSD)

S Mehta, R Teasell. (2013). Painful Hemiplegic Shoulder, EBRSR, Table 11.2

Factors associated with PAIN

- ✓ Lack of GH joint external rotation
- ✓ Trauma to subacromial structures
- ✓ Biomechanical malalignment
- ✓ Mishandling during care/transfers
- ✓ Inappropriate treatment choices
- Neglect

Shoulder Complex

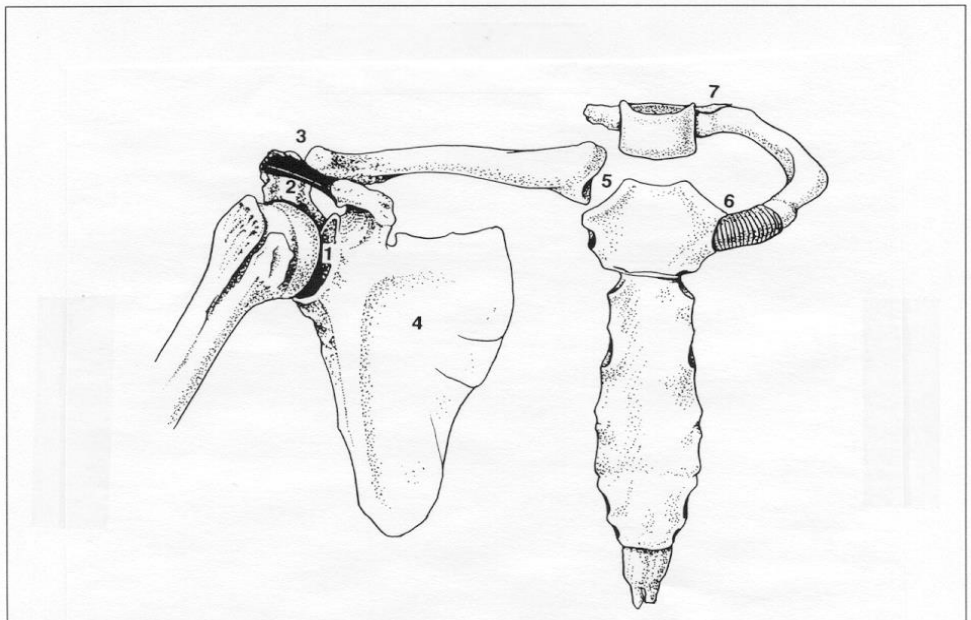


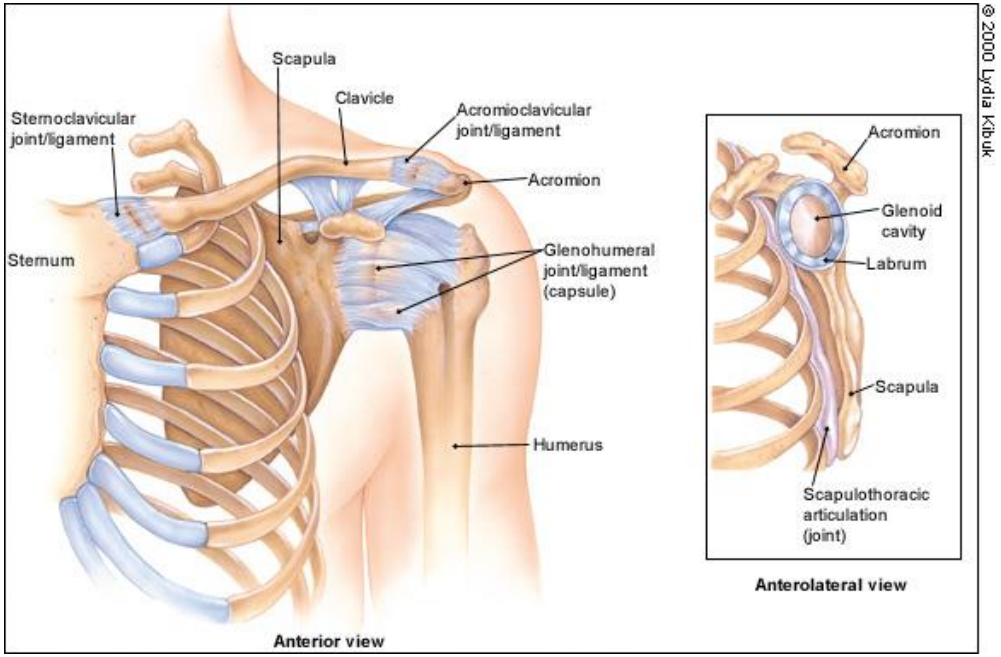
Fig. 1-1. The components of the shoulder joint complex: (*1*) glenohumeral joint; (*2*) subdeltoid joint; (*3*) acromioclavicular joint; (*4*) scapulothoracic joint; (*5*) sternoclavicular joint; (*6*) first costosternal joint; (*7*) first costovertebral joint.

- Glenohumeral Joint (GH)
- Scapulothoracic Joint (ST)
- Acromioclavicular (AC)/ Sternoclavicular joint

The Shoulder is Complex

Glenohumeral Joint (GH)

- Ball and socket joint
- Stability vs. Mobility
- Only 1/3 of the HH contacts glenoid fossa

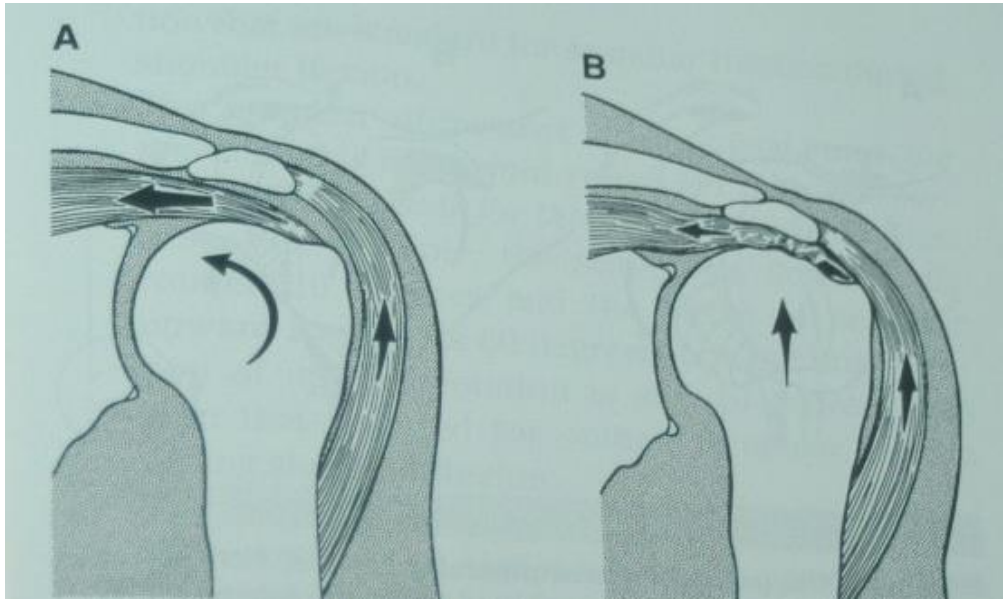


Mobility is Great! Stability is Not!

Glenohumeral Joint (GH)…….
Is susceptible to

Subluxation

Impingement



Shoulder Movement

- From 0-30 degrees:
  - Setting of scapula
  - Primarily glenohumeral movement
- From 30-150 degrees:
  - Scapulohumeral rhythm (2:1 GH:scapula)
  - External rotation and depression of humeral head to clear acromial arch
- Beyond 150 degrees:
  - Thoracic extension to complete elevation

Range >90° elevation puts at arm at risk

Force Couples of the Scapula

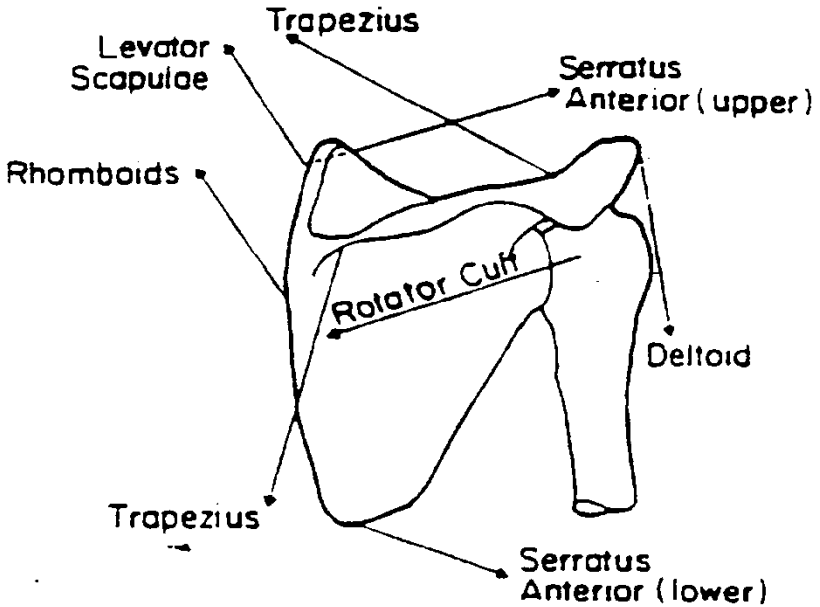
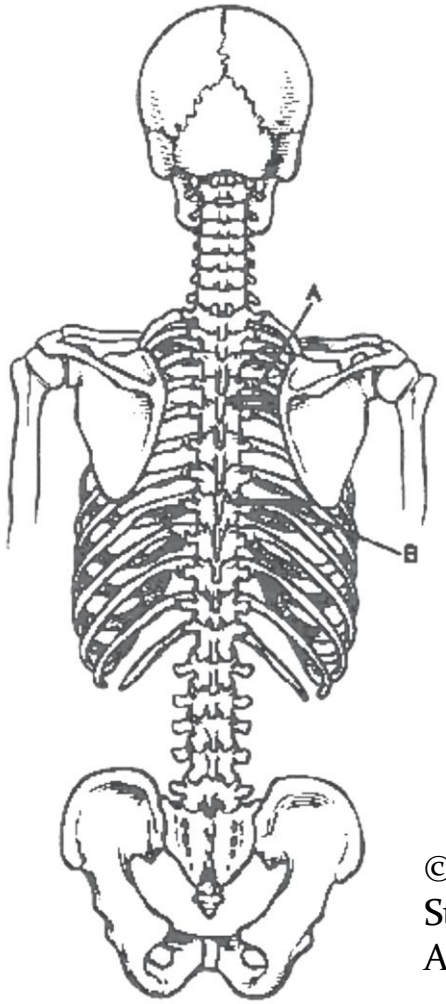


Fig. 12. The major muscle forces acting on the shoulder girdle. (Adapted from Dvir and Berme.[14])

The Scapula is attached to the Thoracic wall by Muscles

Postural Alignment



Poor posture puts the shoulder at risk
Prolonged postures can effect scapular muscles

Canadian Best Practice Guidelines Treatment of the Hemiplegic Arm

Canadian Best Practices Recommendations for Stroke Care

- 5.5.1 – Management of the Arm and Hand following Stroke
- 5.5.2 – ROM and Spasticity in the Shoulder, Arm and Hand
- 5.5.3 – Management of Shoulder Pain following Stroke

July 2013

www.strokebestpractices.ca

EBRSR

Evidence-Based Review of Stroke Rehabilitation

- Chapter 11
  Painful Hemiplegic Shoulder

Sept 2013

www.ebrsr.com

5.5.3 Management of Shoulder Pain following Stroke

A. **Prevention of Hemiplegic Shoulder Pain**

i. Joint protection strategies should be used during the early or flaccid stage of recovery to prevent or minimize pain. These include;

   a. Positioning and supporting the arm during rest (Level B)

   b. Protecting and supporting the arm during functional mobility. (Level C)

   c. Protecting and supporting the arm during w/c use by using a hemi-tray or arm trough. (Level C)

   d. During the flaccid stage slings can be used to prevent injury; however, beyond the flaccid stage the use of slings remains controversial. (Level C)

5.5.3 Management of Shoulder Pain following Stroke

A. **Prevention of Hemiplegic Shoulder Pain**

ii. Overhead pulleys should not be used. (Level A)

iii. The arm should not be moved beyond 90° flexion or abduction, unless the scapula is upwardly rotated and the humerus is laterally rotated. (Level A)

iv. Patients and staff should be educated to correctly handle the involved arm (Level A). For example, excessive traction should be avoided during assisted movements such as transfers. (Level C).

5.5.1 Management of the Arm and Hand following Stroke

vii. For patients with a flaccid arm (CMSA <3) electrical stimulation should be considered (Level B).

x. ROM exercise should be provided that includes placement of the upper limb in a variety of appropriate and safe positions within the patient's visual field. Level C).

5.5.2 ROM and Spasticity in the Shoulder, Arm and Hand

i. Spasticity and contractures can be prevented or treated by antispastic pattern positioning, ROM exercises and/or stretching.

   (Early Level C, Late Level C).

   Routine use of splints is not recommended. (Early Level A, late Level B)

What is SHiPP?

- Standard of Care for preventing and managing shoulder pain
- Whole Team training
- Documentation and Care Plan Tools
- Patient and Family Education

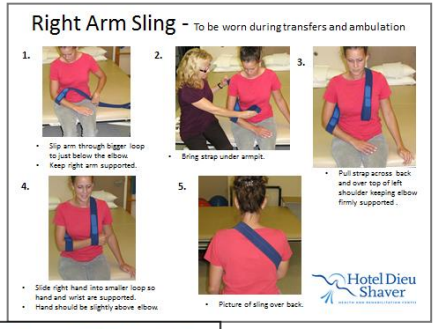
- **Supporting** *the arm during transfers/gait*
- **Handling** *of the arm during care*
- **Positioning** *of the arm during sit/lie*
- **Pain** - *What do I do if a patient reports pain*?

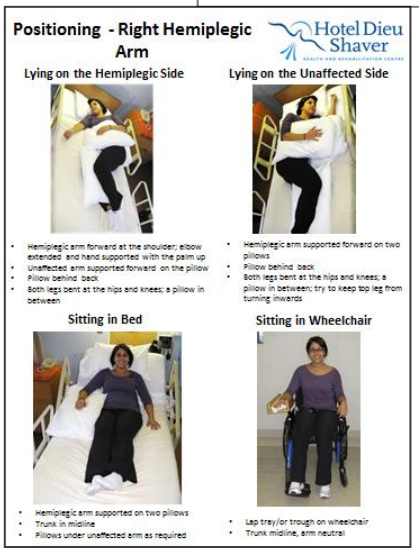
SHiPP – Inclusion Criteria

- Flaccid Arm
- Inability to lift arm actively to 90º when lying
- Pain in shoulder or arm

SHiPP Mates

- Kardex " High Risk Shoulder"
- Bedside Logos
- An individualized plan of care will include
  - Supporting
  - Handling
  - Positioning
  - Pain
- Education and skills training of the patient/caregivers



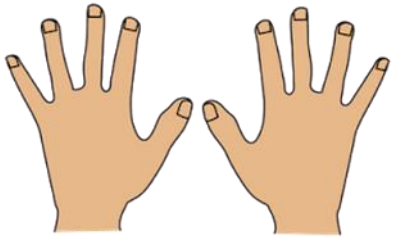


Roles & Responsibilities

OT, PT, NSG, SLP, SW, Rect Ther, Pastoral Care, Portering

OT, PT, NSG

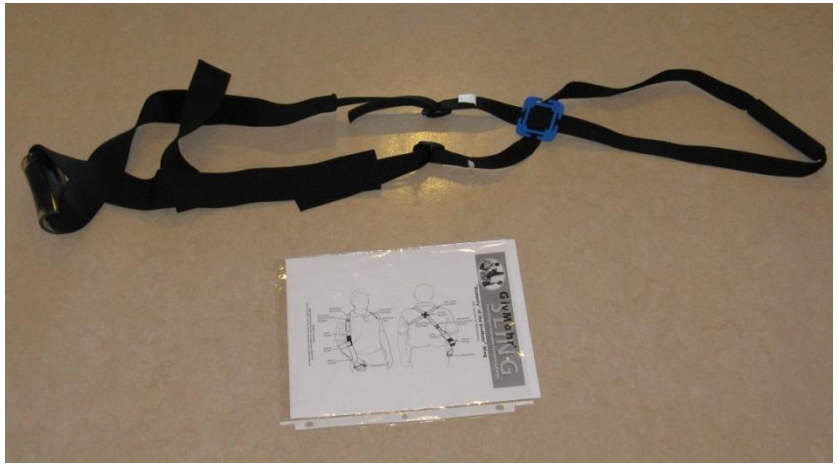
OT, PT



SHiPP
Standard of Care Statements

- SUPPORTING: The arm will be supported during transfers and mobility
- HANDLING: While moving the arm proper technique will be utilized and movements are restricted to safe limitations
- POSITIONING: While sitting or lying positions will be encouraged that consider trunk alignment, minimize contractures, promote weight-bearing and encourage sensory input
- PAIN: Reports of pain will be acted on immediately; assessed, documented, shared with the team.

SUPPORTING: The arm will be supported during transfers and mobility



Benefits of Proper Support During Activities

- Minimizing trauma to the GH joint from prolonged unsupported position
- Keep the UE from getting caught/pinched/twisted during movements
- Controlling edema in hand
- Limits the effect of the arm on balance

Bedside logos for transfers

Left Hemiplegia
Single-Person Transfer

Right Hemiplegia
– Standing Lift

Right Hemiplegia
Two-Person Transfer

Right Arm Sling - To be worn during transfers and ambulation

1.

- Slip arm through bigger loop to just below the elbow.
- Keep right arm supported.

2.

- Bring strap under armpit.

3.

- Pull strap across back and over top of left shoulder keeping elbow firmly supported .

4.

- Slide right hand into smaller loop so hand and wrist are supported.
- Hand should be slightly above elbow.

5.

- Picture of sling over back.

Hotel Dieu Shaver

HANDLING: While moving the arm proper technique will be utilized and movements are restricted to safe limitations

Benefits

- Minimize impingement, overstretching and joint damage to the shoulder
- Minimize tone as an anticipatory response

HANDLING: While moving the arm proper technique will be utilized and movements are restricted to safe limitations

Slow and Secure

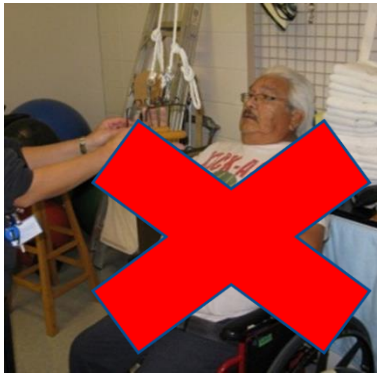
- Arm is well supported to ensure patient comfort. This may include supporting both the upper and lower arm
- Movements will be slow to limit spasticity and ensure patient's comfort

HANDLING: While moving the arm proper technique will be utilized and movements are restricted to safe limitations

Movement Restrictions

- Arm is not moved above 90° elevation. (ie elbow does not move above shoulder).
- No overhead pulleys

NO PULLEY ZONE!



HANDLING: While moving the arm proper technique will be utilized and movements are restricted to safe limitations

No Pulling

- Avoid lifting through armpit or pulling on arm to move patient. Instead hold upper trunk near scapula to assist during movement
- Dressing Rule: “First on; last off”

HANDLING: Transfers

Incorrect

Correct

POSITIONING: While sitting or lying positions will be encouraged that consider trunk alignment, minimize contractures, promote weight-bearing and encourage sensory input

Positioning

Benefits of Proper Positioning

- Support the shoulder joint to minimize subluxation & joint damage
- Maintaining muscle and joint length
- Minimize edema to the wrist and hand with elevation
- Promote sensory awareness

Proper Positioning Principles

- The spine, pelvis and head make a straight line.
- Hips to the back of the chair
- Arm is supported (so that shoulders are equal height)
- Resting position of all joints
  - Shld in sl. Flex, ABD, ER
  - Elbow <90°, wrist slight ext, open hand
- Feet shoulder width apart

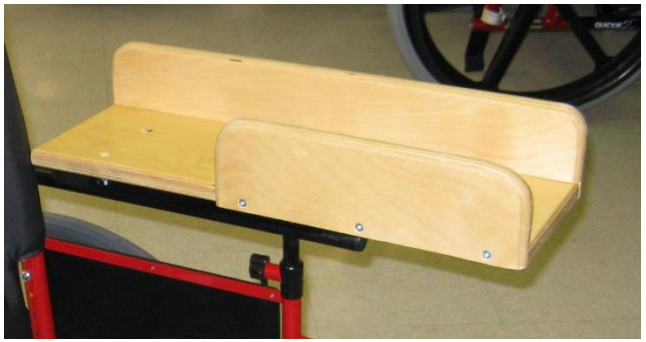
Positioning Devices - Static

- Use pillows, lap trays, troughs, towels

Lap trays

Pillows & towels

Arm Trough



Bedside Logos for Positioning

Positioning - Left Hemiplegic Arm

Hotel Dieu Shaver

Lying on Hemiplegic Side

- Hemiplegic arm forward at the shoulder; elbow extended and hand supported with the palm up
- Unaffected arm supported forward on the pillow
- Pillow behind back
- Both legs bent at the hips and knees; a pillow in between

Lying on Unaffected Side

- Hemiplegic arm supported forward on two pillows
- Pillow behind back
- Both legs bent at the hips and knees; a pillow in between; try to keep top leg from turning inwards

Sitting in Bed

- Hemiplegic arm supported on two pillows
- Trunk in midline
- Pillows under unaffected arm as required

Sitting in Wheelchair

- Lap tray/or trough on wheelchair
- Trunk midline, arm neutral

Positioning on the Affected Side

- Move person to far side of bed.
- Protract hemiplegic shoulder (glide scapula forward) and gently move hemiplegic arm away from body.
- Roll onto hemiplegic side.
- Readjust position as needed so person is not on the tip of the shoulder.
- Place pillow between knees and at back.
- Place other supports (pillows or folded flannels) as needed

Sitting in Chair – 90/90/90 Rule

- Trunk & head aligned
- Shoulder symmetry
- Arm supported
- Hand open & WB'ing

Shoulder Pain

5.5.3 Management of Shoulder Pain following Stroke

B. Assessment of Hemiplegic Shoulder Pain

i. The assessment of the painful hemiplegic should shoulder include evaluation of;

- Tone
- Strength
- Changes in length of soft tissues
- Alignment of joint of the shoulder girdle
- Orthopedic changes in the shoulder

(Level C)

5.5.3 Management of Shoulder Pain following Stroke

B. Assessment of Hemiplegic Shoulder Pain

i. The assessment of the painful hemiplegic should shoulder include evaluation of;

- Tone
- strength
- Changes in length of soft tissues
- Alignment of joint of the shoulder girdle
- Orthopedic changes in the shoulder

(Level C)

PAIN: Reports of pain will be acted on immediately; assessed, documented, shared with the team

Don't dismiss shoulder pain!

Responding to Pain

- **ASSESS:**
  - Pain (pain scale, exacerbating/relieving factors, event)
  - Evaluate Tone
  - Changes in length of Soft tissues
  - Joint alignment of GH, Scapular/thoracic
  - Other orthopedic changes
- **DOCUMENT**
- **COMMUNICATE:** with the team
  - PT, OT, MD, NSG
  - Review care plan
- **EDUCATE**

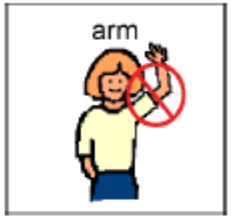
Patient & Family Education

- “Caring for My Affected Arm after Stroke”
- Putting on my Sling
- Education session

Caring for your Affected Arm after Stroke

Support your arm with your sling:

- Transferring
- Walking

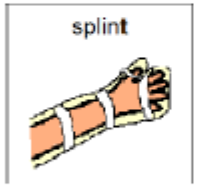


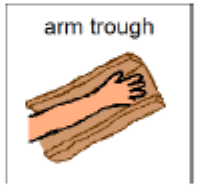
Handle your arm with care

- **Avoid** lifting arm past **shoulder height**

Position your arm correctly

- Use your positioning devices as instructed
- Arm should rest slightly in front of your body, in view





Pain – Tell your nurse, therapist or caregiver **right away**

Sling Instructions:

1. **Put arm through big loop**, below elbow.
2. Bring strap **under armpit.**
3. Pull strap **across back** and **over other shoulder.**
4. **Slide hand through small loop** so hand and wrist are **supported.**
5. **Hand** should rest **slightly above elbow height.**

My Personal Instructions:

Sling use:_____

Positioning in wheelchair: _____

Positioning in bed: _____

Other Notes:

_____
_____
_____
_____
_____

Remember!

Support your arm while you are **transferring** and **walking.**
Handle your arm with care and **avoid lifting above your head.**
Position your arm while sitting in a chair or bed.
Pain – tell your nurse, therapist or caregiver **right away.**

_____

Signature:_____ Date:_____

Signature:_____ Date:_____

SHiPP has arrived

Supporting *the arm during transfers/gait*
Handling *of the arm during care*
Positioning *of the arm during sit/lie*
Pain - *What do I do if a patient reports pain?*

Get on Board

Resources

- www.strokebestpractices.ca
- www.ebrsr,com
- www.canadianstrokenetwork.ca (tools, download Score EBR)
- http://strokengine.ca
- www.glengillen.com (Stroke Rehabilitation: a Function-Based Approach, 3rd ed. 2011. Elsevier Mosby)