

Module 9: Positioning, Transfers and Ambulation

Learning Objectives

Upon completion of this module, nurses will be able to:

- Describe the importance of the nurse's role in patient recovery related to mobility
- Identify key factors for assessment prior to mobilizing the stroke survivor
- Understand the hemiplegic shoulder and how to prevent injury
- State general principles to follow when assisting during positioning, mobilizing, transferring and walking stroke survivors
- Identify common aids used for bed mobility, transfers and ambulation
- Share principles of energy conservation with stroke survivors

Please refer to the following content when reading this module:

1. Taking Action for Optimal Community and Long-Term Stroke Care: A Resource for Healthcare Providers, Chapter 6 – Activities and Participation: [Transfers](#), [Mobility](#), and [Shoulder Care](#)
2. [Risk Assessment and Prevention of Pressure Ulcers](#)





The goal of assisting the stroke survivor with mobility is to promote independence of movement in a safe manner, maximizing recovery of function and preventing secondary complications. Recovery starts immediately. As the brain is re-establishing connections, every movement influences how it rewires. Using the involved limbs as much as possible promotes brain reorganization. Patients can and should continue to practice outside of formal therapy times. Therefore, therapy is an ongoing activity and nurses are a key member of the team.

Nurses should encourage the stroke survivor to initiate the movement themselves whenever able. This means assisting and encouraging the stroke survivor's body to work as normally as possible. It is critical, early on in the survivor's recovery, that the interprofessional team makes the most of, and builds upon, any functional ability that they have.

It is important to work together as an interprofessional team regarding mobilizing the stroke survivor. A nurse should regularly consult with team members to know what techniques the patient is working on. Supporting these techniques, the nurse can provide consistency and the necessary repetition for the survivor to gain skills, while assessing the survivor's level of fatigue and ability in each setting.

According to the Canadian Stroke Best Practice Recommendations (Teasell et al., 2020, 5.1 i, ii):

- Patients should participate in training that is meaningful, engaging, repetitive, progressively adapted, task-specific and goal-oriented in an effort to enhance motor control and restore sensorimotor function
- Training should encourage the use of patients' affected limb during functional tasks and be designed to simulate partial or whole skills required in ADL (e.g., folding, buttoning, pouring, and lifting)

Mobility is important for:

- Preventing secondary complications, including deep venous thrombosis
- Maintaining or improving skin integrity, preventing pressure injuries
- Maintaining or improving function
- Maintaining and improving awareness of the body
- Improving lung function
- Maintaining bowel and bladder function
- Preventing bone loss
- Preventing contractures
- Decreasing pain
- Improving mood
- Reducing edema
- Promoting neuroplasticity and stimulation (which promote recovery)

Proper positioning of the stroke survivor is important to prevent many secondary problems and maximize recovery. The goals of positioning are to:

- Support the affected limbs
- Prevent soft tissue damage
- Prevent and manage pain
- Increase awareness of the affected side
- Promote body symmetry and alignment
- Reduce the tendency for spastic muscles to pull the limbs into flexion and adduction
- Prevent joint and muscle stiffness and maintain flexibility
- Provide comfort
- Reduce swelling and/or edema
- Maintain skin integrity

The Hemiplegic Shoulder

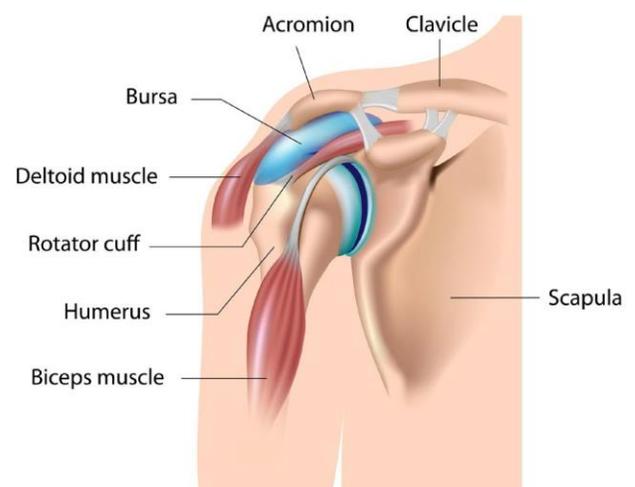
Before reviewing the specifics of positioning, mobility and transfers for stroke survivors, it is important to learn about the hemiplegic shoulder.

The normal shoulder

- Contributes to functional movement, affecting transfers, balance, activities of daily living (ADLs) and hand function
- Has a large range of motion which contributes to speed, power and coordination
- Is vulnerable to injury, as the sacrifice for this increased range of motion is decreased stability

The shoulder girdle consists of the glenohumeral (GH) joint, scapula and clavicle. The GH joint is a ball and socket joint consisting of the humeral head as the ball and the shallow saucer-like surface of the glenoid fossa on the scapula. While most think of the GH joint as providing movement at the shoulder, **only 90 degrees** of shoulder movement occurs at that joint. Any shoulder movement beyond 90 degrees requires movement of the scapula and clavicle.

The scapula is attached to the sternum by the clavicle but is otherwise free-floating on the trunk. Therefore, the shoulder girdle is supported entirely by soft tissues, primarily muscle. This is why the GH joint is so versatile in function, yet so **vulnerable to injury**. When the muscles are paralyzed, as in stroke, there is very little to support the shoulder girdle and the weight of the arm itself can cause injury; the GH joint is at risk of subluxation. Furthermore, important nerves and arteries travel through the axilla and are also very vulnerable to injury.



Try this activity: put your hand on your opposite shoulder (clavicle) and try to raise that arm in any direction beyond 90 degrees without moving your clavicle and scapula.

Up to 65% of stroke survivors report shoulder pain within the first year of their stroke. Pain can start from as early as 2 weeks post-stroke to 2-3 months later (Kumar 2019).

Shoulder pain is difficult to treat and can affect the functional recovery of the arm and hand, impede restful sleep, and contribute to depression. Prevention is key.

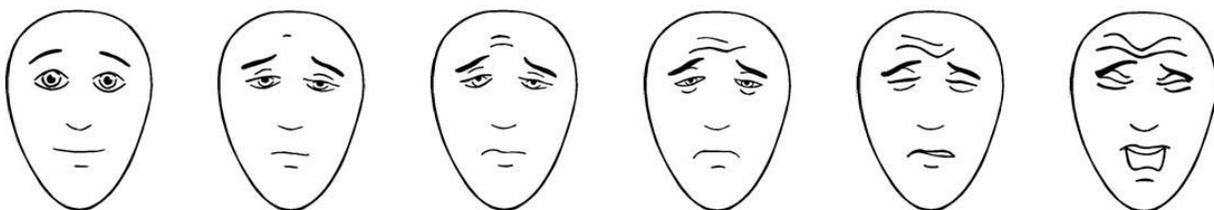
To avoid injury, **the affected arm should always be supported and should not be raised beyond 90 degrees.** Movement beyond that range requires ensuring that the shoulder blade is also assisted to move appropriately. An *Occupational Therapist* or *Physiotherapist* can demonstrate this technique for the nurse.

Assessment of Shoulder Pain

Pain can be assessed using [RNAO Assessment and Management of Pain Clinical Best Practice Guidelines](#).



The Faces Pain Rating Scale may be particularly useful, especially for persons with aphasia.



"These faces show how much something can hurt. This face [point to face on far left] shows no pain. The faces show more and more pain [point to each from left to right] up to this one [point to face on far right] - it shows very much pain. Point to the face that shows how much you hurt [right now]." Score the chosen face 0, 2, 4, 6, 8, or 10, counting left to right, so "0" = "no pain" and "10" = "very much pain". Do not use words like "happy" or "sad". This scale is intended to measure how a person feels inside, not how their face looks.

Transfers and Mobilization

With the goal of safe and appropriate transfers and mobilization of the stroke survivor, the nurse should consider the following prior to mobilizing the patient:

- Is there already an established transfer method documented? Where possible consult with the *Physiotherapist*.
- Is the survivor able to understand, follow directions and cooperate?
- What is the survivor's fatigue level?
- Is the stroke survivor able to move themselves in the bed? (e.g., roll to side or shift hips)
- Is the stroke survivor able to maintain sitting independently or is the survivor falling to the side or backwards?
- Is the survivor able to extend their knee in sitting? Able to stand? (ensure large leg muscles are functioning to support weight)
- Is the stroke survivor aware of the affected side of the body and the environment on the affected side? (e.g., do they turn the head to both sides, do they look at the person who is speaking to them when they are on the affected side, are they aware of where the affected arm is - are they supporting it or is it caught behind or underneath them?)
- Is muscle tone altered in a way that will impede the movement or requires support such as flaccidity (e.g., hemi arm) or spasticity (e.g., ankle turning in)?

Mechanical lift transfer

Consider using a mechanical lift transfer if the stroke survivor:

- Is unable to maintain sitting without moderate to maximal support
- Has poor sitting balance
- Cannot follow directions to assist with a safe transfer
- Does not move well in bed
- Is unable to take weight on the legs
- Requires assistance but has a body mass that is not manageable using a two person transfer

Two-person transfer

Consider using a two-person transfer if the stroke survivor:

- Is able to sit with minimal support
- Is able to follow instructions to participate in the transfer but needs physical help
- Is able to move themselves in bed (i.e., roll, bridge) which shows sufficient recovery to assist in a transfer
- Needs the second person to help manage clothing when toileting

Note: staff must feel safe and physically able to provide the amount of assistance required, otherwise consider a transfer technique with more support.

One-person transfer

Consider using a one-person transfer if the stroke survivor:

- Is able to move themselves in bed and sit themselves up on the side of the bed
- Is able to stand with minimal to moderate assistance
- Is able to follow instructions to transfer safely

Walking with assistance

Before walking the stroke survivor, check if the stroke survivor is:

- Reported in the transfer notes or by therapists to already be walking (make note of gait aids or splints used and/or required)
- Able to sit up and transfer with minimal assistance
- Able to take weight on the affected leg
- Able to move or advance their affected foot (may use a slider; refer to section on aids later on in module)

Common Assessment Tools For Motor Control And Balance

Chedoke-McMaster Stroke Impairment Inventory

This assessment is a tool utilized to measure physical impairment of an individual following a stroke. It assesses six domains (shoulder pain and stages of recovery of postural control, arm, hand, leg and foot). The score identifies the physical impairment to be within one of the seven stages of recovery listed below:

- Stage 1: Flaccid paralysis
- Stage 2: No voluntary movement; synergies elicited through facilitation
- Stage 3: Synergistic movements may be elicited voluntarily
- Stage 4: Movements predominately in synergistic patterns (elbow flexed, hand fist and wrist flexed; leg extended, adducted and foot pointing down or mass flexion of hip, knee and ankle)
- Stage 5: Some selective movement; beginning to move out of synergistic patterns
- Stage 6: Coordination and movement patterns near normal; trouble with more rapid complex movements
- Stage 7: Normal

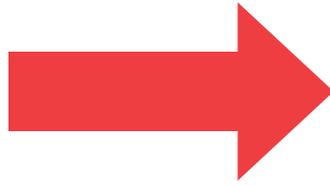
(Miller et al., 2008)

Berg Balance Scale

This scale measures impairment in balance function by assessing the performance of 14 functional tasks, mostly in standing. The maximum score is 56. An admission score of ≤ 29 is predictive for falling.

Prevention is key

- Good handling
- Good positioning
- Use of appropriate aids and equipment



- Prevention of tissue damage
- Prevention of pain
- Maintenance of joint alignment and muscle length



General Principles for Assisting Stroke Survivors

Helping a stroke survivor means helping them to be safe, comfortable and independent. Here are some general principles to follow when assisting the stroke survivor:

- Use a *personalized approach* for each stroke survivor. Each survivor will be affected differently, so take time to observe what they are doing and how you may assist them.
- Use a *problem-solving approach*. There is not always a set routine of care to follow.
- *Prepare the environment* by making sure that the wheelchair is set up properly, that all adaptive equipment is secure and that the patient is wearing appropriate footwear, etc.
- Interact with the stroke survivor and *use simple, clear instructions*. Demonstrating the action may help to enhance the survivor's understanding. Check to see if they have understood. The *Speech Language Pathologist* may have further suggestions to enhance communication.
- *Make it active*. Let the stroke survivor initiate the movement and assist only as needed. The nurse should coordinate their efforts with the survivor's to maximize success. Knowing your survivor's abilities and limitations will help the nurse to know whether verbal cueing, physical cueing or assistance is needed.
- The survivor's brain needs time to think and plan what is about to happen. *Do not rush*. Move slowly and gently, giving time to prepare. This will allow the stroke survivor to participate more successfully. A calm and supportive approach will help to keep muscle tone down and the survivor from fatiguing due to anxiety.
- Recognize that the stroke survivor's energy levels can change throughout the day.

(Heart and Stroke Foundation, 2015)

Refer to *Appendix: Detailed Instructions for Assisting with Mobility and Transfers*, at the end of this module, for further detailed instructions on assisting with transfers and mobility. Refer to your organization's policies and procedures regarding positioning and transfers.

Handling Techniques for the Hemiplegic Arm

- Prepare the patient for the movement. Tell the patient what you are going to do to promote awareness of the arm.
- Involve the patient in protecting the arm by bringing their attention to the arm and activity.
- During bathing and dressing, support the arm under the elbow and wrist and move the joints gently.
- Never lift the arm by the hand; it does not support the shoulder joint and will cause stretching of soft tissues.
- Never pull on the arm or lift through the axilla. You are asking an unprotected joint to support body weight, which will cause injury.
- Avoid quick movements, as it can increase muscle tone and can cause pain; keeping movements slow and gentle can reduce tone and stimulate activity.
- Do not lift the arm past 90 degrees. Passive range of motion exercises should not be done beyond 90° of flexion or abduction unless the scapula is upwardly rotated and the humerus is laterally rotated (an **Occupational Therapist or Physiotherapist** can instruct you in the proper technique). (Teasell et al., 2020, section 5.3iv)

(Southwestern Ontario Stroke Network [SWOSN], 2012)

Refer to

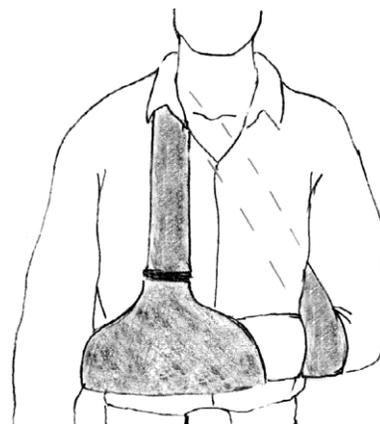
[Management of the Hemiplegic-Arm: Implementing a Best Practice Protocol.](#)

Aids and Equipment

The *Physiotherapist* and/or *Occupational Therapist* should be consulted regarding recommendations for gait aids and devices, and ongoing review of appropriateness and when to progress or advance the patient to more independent mobility.

Arm supports

- Lap tray and arm trough - used to support a hemiplegic arm
- Hemi arm sling- used to support a flaccid or painful arm when transferring or walking and **should not be left on when sitting or lying**



Gait aids

Item	Purpose
Walking/transfer belt	Used to provide a hand hold for assisting during walking and transfers
Foot drop splint	Ankle foot orthosis (AFO) is a splint designed to support the forefoot during the swing phase of walking; may also be used to prevent the ankle from inverting, and provide stability
Cane	Walking aid used by the unaffected arm; single point canes and quad canes offer varying amounts of support
Walker	Walking aid that provides a greater degree of support than a cane but requires some use of both arms. Walkers are available in many different types. Those without wheels provide more stability while those with two or four wheels provide easier mobility but require more control to manage. The <i>Physiotherapist</i> and/or <i>Occupational Therapist</i> will establish the most appropriate type specific to the stroke survivor
Wheelchair	Provides transportation for a non-ambulatory patient; the <i>Occupational Therapist</i> will prescribe the most appropriate wheelchair if required permanently
Sliding Board	Used for bed to chair transfers if a stroke survivor is unable to stand but has potential to transfer without using a lift
Slider	May be used to make it easier for a stroke survivor to move/advance their leg during walking or transfers (see photos below)



A curling slider can be used over the patients shoe during walking.

General Guidelines for Positioning a Patient

The Registered Nurses Association of Ontario's Guideline for Risk Assessment and Prevention of Pressure Ulcers (2011, p. 10) recommends the following for all patients:

For patients in bed, nurses should:

- Reposition at least every two hours or sooner if at high risk
- Use devices to enable independent positioning, lifting and transfers (e.g., sliding board, bed rails)
- Use pillows or foam wedges to avoid contact between bony prominences
- Use devices to totally relieve pressure off the heels and bony prominences of the feet
- Use the recommended 30 degree turn to either side to avoid positioning directly on the trochanter
- Limit time with head of bed elevated (where possible) to avoid prolonged pressure on the coccyx
- Refrain from using donut type devices or products that localize pressure to other areas

For patients up in a chair, nurses should:

- Have the patient shift weight every 15 minutes, if able
- Reposition at least every hour if unable to shift weight
- Use pressure-reducing devices for seating surfaces
- Refrain from using donut type devices or products that localize pressure to other areas
- Consider postural alignment, symmetry, distribution of weight, balance, stability, support of feet and pressure reduction when positioning individuals in chairs or wheelchairs

Consult *Occupational Therapy* and/or *Physiotherapy* for seating assessment and adaptations and recommendations for customized seating and wheelchair design.

Once you have positioned the stroke survivor, it is important to ensure the call bell is within reach and to check on them regularly. It is also important to reposition every two hours, or more frequently if they are not able to move themselves. This will reduce the risk of pressure sores.

Intentional Rounding (see page 6 in *Module 2: Stroke Rehabilitation Management*) is an effective method to address comfort and positioning.

Stroke-Specific Recommendations for Positioning

The nurse should adhere to the following key principles:

- Provide comfort and support limbs.
- Maintain good alignment (neutral and symmetrical).
- Follow the stroke-specific recommendations for positioning; they are designed to counteract the tendency towards spastic muscle patterns (i.e., flexed, adducted arm and extended, adducted leg). For example, the antecubital fossa (elbow crease) should be facing up whenever possible, and the hand supported with fingers open and spread apart.
- Maintain skin integrity; protect bony pressure points.
- When possible, position the hand above the elbow and elevate the feet to prevent edema.
- Provide sensory input (e.g., warming blanket) to help normalize muscle tone.

Lying in bed

- Three pillows can be used in supine (one under the head and two diagonally under the scapulae) to support the head and maintain scapular protraction.
- The affected arm should be positioned a comfortable distance away from the body, with the elbow crease facing up whenever possible. The hand should be supported with the palm down, and hand open.
- In supine, the pelvis should be level (not tipped or rotated to one side) and the feet should be supported at 90 degrees to prevent shortening of spastic muscles.
- In side-lying, never have them lie directly on their shoulder; pull the shoulder blade forward into protraction.
- Lying on the unaffected side sometimes can be a helpful position for stroke survivors who tend to push with their unaffected side.



Lying on the unaffected side

Sitting in a wheelchair or chair

When the survivor is sitting, the hips should be back and centred in the chair. Hips often slide forward in a chair, creating a slumped position. The nurse or healthcare provider should regularly remind or help the survivor to move their hips back in the chair, following the 90 degree rule. The hips, knees and ankles should be flexed to 90 degrees. This position will help the survivor sit comfortably and safely, and counteract the tendency for muscle spasticity.

The foot rests should be adjusted to make sure the affected foot is supported. The hand should be supported with the palm down, wrist slightly extended and fingers open and spread apart.

Sliding forward in a chair can:

- Affect postural tone and control
- Cause problems with transfers and control
- Increase high tone (spasticity), pain, and the risk of skin breakdown (HSF, 2015).



Nurses should actively communicate with the *Physiotherapist* and/or *Occupational Therapist* about each patient's mobility to share concerns and discuss specific, individualized techniques and be aware of updated techniques to apply as the patient recovers. If a nurse is having trouble seating the patient in the wheelchair in the right position, they should notify the *Occupational Therapist* and/or *Physiotherapist*. The wheelchair could be part of the problem.

Clonus

Clonus is a spastic movement that occurs most often at the ankle; the foot shakes or 'beats' when pressure or stretch is applied to the ball of the foot. When this occurs, remove the pressure by lifting the foot or sliding it forward so the pressure is taken through the heel. Or, if it occurs in sitting, standing or walking, help the stroke survivor put more weight through the leg to bring the heel into contact with the floor, and maintain the pressure through the heel until the clonus stops.

Mobilizing the Stroke Survivor

Mobilizing includes moving in bed, sitting up, transferring, participating in ADLs, standing and walking. Early mobilization is a key component of best practice stroke care. Stroke survivors should be assisted to move as frequently as possible.

The *Physiotherapist* and/or *Occupational Therapist* will assess the stroke survivor's ability to mobilize and will make recommendations for progressing the type of transfer.

When mobilizing the stroke survivor, the nurse or other team member should:

- Prepare the environment
- Let the stroke survivor initiate the movement; assist only as needed
- Encourage use of the affected limbs; promote independence and normal movement
- Communicate in clear and simple sentences
- Promote safety and comfort
- Practice sit-to-stands and at every opportunity

Sit-to-stand protocol

The protocol outlined below has been proven to be effective in helping stroke survivors regain the ability to get up independently (Barreca, Sigouin, Lambert, & Ansley, 2004).

Practice sit-to-stands with your patient as often as possible; practice opportunities provide pressure relief, leg strengthening, balance training and confidence training. A minimum of 13-15 repetitions/day are recommended to achieve improvement.

Sit-to-Stand Protocol

Encourage patient's independence with sit-to-stand (putting on brakes, pushing back foot rests, foot placement) whenever possible. Minimize verbal cues and hand gestures as patient improves in sit-to-stand performance.

Action	Instruction
Brakes on	"Put on your brakes"
Foot rests out of the way	"Push your foot rests back"
Patient moves bottom forward in chair	"Scoot your bottom forward"
Feet shoulder width apart	"Feet apart"
Toes under knees	"Toes under knees"
Interlock the fingers	"Interlock your hands"
Arms out in front	"Arms out in front"
Sit up tall	"Sit up tall"
Nose over knees and stand up in a timely manner	"Nose over your knees and stand up"

Assisting the survivor to walk

- Stand on the affected side
- May use a transfer belt to provide a hand hold (do not hold onto the affected arm)
- Have the appropriate walking aid ready
- Ensure the survivor is wearing well-fitting, supportive footwear with a good tread
- Use a sling if necessary to support the hemiplegic arm
- If a foot drop splint is used, ensure it is worn
- Before walking, ensure stroke survivor is balanced while standing with weight distributed over both feet, not leaning to one side
- Check if the foot clears the floor during each step (toe not catching) and is flat on the floor before taking weight (not rolling over at the ankle)
 - may use a brace to stabilize ankle or assist with toe clearance (foot drop splint)
 - may use a slider to make it easier for the survivor to advance the leg

Ensure safety when walking but *minimize the use of verbal cueing* as it can impede concentration and learning. Alternatively, ask the stroke survivor what they might need to be aware of or do differently. This problem-solving approach promotes learning and retention.



Neuroplasticity

It is essential a stroke survivor makes the most of their brain's critical period of rapid recovery in the earliest days following a stroke. This means encouraging the survivor to initiate movement themselves whenever able, spending as much time as possible on practicing tasks that will help the survivor to recover and assisting and encouraging the stroke survivor's body to work as normally as possible.

Education about deficits affecting mobility

Education related to managing loss of motor control and sensation is key (e.g., techniques to protect and support the hemiplegic arm). However, many other deficits resulting from the stroke (e.g., neglect, visual impairment, impulsivity) also impact mobility. Educating the stroke survivor and caregiver about the nature of these deficits and how to manage them will promote safety. Refer to *Module 7 Cognition, Vision and Perception* and *Module 10 Mood and Behaviour Changes* for more information.

Post-Stroke Fatigue

(see also *Module 2 Stroke Rehabilitation Management*)

Feeling tired is a common complaint after a stroke. About 30-70% of survivors suffer from fatigue. It can be frustrating and can slow down recovery. Tasks that once were simple - sitting up, getting dressed, standing, walking, thinking or having a conversation- now require more physical and mental effort. These things can be tiring. As the stroke survivor regains independence, they may also regain some of their energy. As physical conditions and health issues improve, fatigue may be less of a problem.

Assisting the stroke survivor to manage the fatigue

- Encourage the survivor to plan their day or week in advance, to prioritize tasks that are most important or that need to be done, to consider the times of day they have more energy, and to spread out the tasks that are more physically and mentally demanding.
- Invite the survivor to take up some of those offers of help; remind them that they don't have to do everything themselves.
- Remind the survivor not to overdo it and to balance activity and rest. Encourage planning rest times and being sure to take it, even if they don't feel tired, taking breaks before getting tired helps significantly in optimizing energy levels throughout the day.
- Recommend the survivor does tasks in a way that uses less energy, like sitting down to get dressed or breaking larger tasks into several smaller tasks.
- If seeing, thinking, or having conversations are exhausting for a survivor, encourage them to do as much as they can in a quiet, simple environment. A notepad or calendar can help with the survivor's memory.
- Encourage the survivor to take care of themselves by eating a healthy diet, drinking adequate amounts of water, limiting alcohol consumption, and getting adequate sleep. Remind the survivor of what exercises, foods and/or habits can help restore their strength.
- Remind the survivor not to spend too much time in bed, as lots of bed rest can result in loss of muscle strength.
- Encourage the survivor to find some type of aerobic exercise that they can do to increase activity tolerance (e.g., stationary bicycle, swimming, arm bicycle, seated stepping, NuStep) and do at least a few minutes every day. Encourage the survivor to establish a routine and try to stick to it, building up stamina and strength slowly and sensibly.
- Recommend the survivor join a stroke support group. Other survivors will understand their issues and offer support and ideas to help manage fatigue.
- Encourage the survivor to speak openly and honestly with caregivers about fatigue so that together they can work out the best solution.



Think of a transfer that was very challenging for you.

- How was it challenging?
- How might you improve that patient's positioning or transfers?

What could you do to help a stroke survivor you care for regain greater independence?

Appendix:

Detailed Instructions for

Assisting with Mobility and Transfers

Refer also to your organization's policies and procedures.

Consult with a *Physiotherapist* and/or *Occupational Therapist* if you have any questions.

Resources: [Therapeutic Bed Positioning of the Stroke Patient](#) eLearning Module

Positioning the Stroke Survivor

Positioning the hemiplegic arm in sitting

- Support the arm on a lap tray, arm trough, pillow, or table
- Ensure good trunk alignment and position of the shoulder and arm
- Elevate the hand to reduce edema
- Ensure that there is padding under the elbow and that the hand is resting in a neutral position
- Try to keep the elbow crease (antecubital fossa) facing up

Positioning the stroke survivor in bed

Lying in supine:

- Align head in neutral position, not tipped or turned but in line with the body
- Three pillows can be used (one under the head and two diagonally under the scapulae) to support the head and maintain scapular protraction
- The affected arm should be positioned a comfortable distance away from the body, with the elbow straight and the elbow crease facing up
- The affected hand should be elevated to reduce and/or prevent swelling
- Separate the fingers
- Level the pelvis, if needed, use a towel or flat pillow under the affected hip

Lying on the affected side:

- Align head in neutral position.
- Do not have the stroke survivor lie directly on top of the affected shoulder. Draw the shoulder slightly forward by gently bringing the shoulder blade forward. Support the arm on a pillow with the elbow bent and resting away from the body or with the arm out straight.
- For the legs, bend both knees and position the bottom (affected) leg slightly forward, with a pillow between the knees to provide good alignment and prevent pressure points on bony areas.
- Support the trunk with a pillow lengthwise behind the back.

Lying on the unaffected side:

- This can be a helpful position for a stroke survivor who tends to push with their unaffected side.
- Align head in neutral position.
- Do not lay the patient directly on the shoulder. Place the bottom (unaffected) shoulder in a slightly forward position by drawing the scapula forward.
- Support the affected arm on two pillows to keep the arm from dropping down and pulling on the shoulder. Elevate the hand as needed with fingers spread.
- Position the top (affected leg) slightly forward and in a bent position while resting on a pillow for support. Support the trunk with a pillow tucked in lengthwise behind the back.

Moving in Bed

Rolling to the affected side

- When rolling to the affected side, ensure that the affected arm is slightly forward to prevent rolling onto the shoulder.
- Stand on the weak side and remove side rail.
- Tell stroke survivor to bend their stronger leg and use it to help roll.
- To roll, assist the stroke survivor by supporting the back of the shoulder and hip as needed. Encourage them to roll themselves as much as possible by turning their head, reaching over with the unaffected arm and pushing through the foot of the bent leg.

Rolling to the unaffected side

- Ask the stroke survivor to support their arm and bring it across their body. Ensure that the affected arm is supported at all times.
- Remove side rail and stand on unaffected side. The unaffected leg remains straight.
- Help the patient bend the affected leg.
- Assist the stroke survivor to roll by helping at the back of the shoulder and hip as needed. Encourage them to roll themselves as much as possible by turning their head, pushing with the leg, and drawing their affected arm across the survivor's body.

Repositioning the stroke survivor in bed

- Remove pillows, lower bed rails, adjust the height of bed, and lower the head of the bed.
- Ensure the bed brakes are applied.
- Ask the patient to bend the unaffected leg and assist them to bend the affected leg.
- Place both of the patient's arms on their chest, supporting the affected arm with the unaffected arm.
- The stroke survivor can tuck their chin and may be able to help by pushing through their heels. Encourage the stroke survivor to help, if able.
- Remember that a draw sheet or slider sheet can help.
- Do not lift the patient. Instead, shift weight toward the direction of movement with feet apart, back straight, and knees bent. Count 1-2-3 GO with partner.
- Use a mechanical lift if the stroke survivor cannot assist with the repositioning.

Sitting up from side lying

- Depending on the patient's ability, a second nurse or *Personal Support Worker* may be needed to assist with either the legs or the trunk.
- Elevating the head of the bed can make the transition easier for you and the patient
- Lower the bed to ensure the stroke survivor's feet will touch the floor to provide them with stability and assist with sitting balance once up.
- From side lying, bend the hips and knees, and then let the legs come over the edge of the bed, drawing the knees as far up to the chest as possible. Assist by placing one hand on the trunk just under the shoulder and ask the stroke survivor to lift their head and push up with their arms. Assist by applying a bit of pressure to the top of the pelvis to help lever the survivor up.
- Don't forget to use good body mechanics, lift with the legs and keep core muscles engaged.
- Assess the stroke survivor's ability to sit unsupported without leaning or falling, as this will dictate whether to proceed with a one or two-person transfer or need for a mechanical lift.

Moving from sitting to standing

- Ask or assist the stroke survivor to scoot their bottom forward so they are on the edge of the seat
- Stroke survivor's feet should be flat on floor with toes under knees
- Ensure the survivor's feet are positioned shoulder width apart
- Apply the transfer belt snugly and use as needed to assist the survivor to stand
- Support a flaccid arm with a hemi-sling
- Always count together or communicate in some way so that both will start moving at the same time
- Cue the stroke survivor to bring their shoulders forward over knees and sit up tall:
"Nose over your knees and stand up"
- As much as possible, the weight should be distributed evenly over both feet
- Provide supervision/cueing and as minimal guidance or assistance as required to complete the stand

Transferring the Stroke Survivor

Two-person transfer

- One person assists the stroke survivor to a stand position using a transfer belt while a second person assists with turning the hips to the chair, preventing the trunk from falling back and guiding the survivor into the chair safely.

Transfer to the unaffected side

- Put the stroke survivor's shoulder sling on if the survivor is unable to safely use the arm to assist in the transfer
- Ensure wheelchair is positioned at a slight angle to the bed so that the corner of the chair touches the bed on the survivor's unaffected side
- Ensure the wheelchair's brakes are on and the arm rest and foot rests are removed (if applicable)
- Ensure the stroke survivor has proper footwear
- Ensure the stroke survivor is sitting with both feet flat on the floor and the balls of their feet are under their knees; turn the stroke survivor's heels in the direction of where they are planning to transfer to
- Put transfer belt on snugly; ensure it is on snug so that it does not slide up
- Ask the stroke survivor to sit up tall and bring their nose forward over their knees
- Ask the stroke survivor to push up from the bed and assist as needed to stand and guide the turn to transfer
- A second person behind can guide the hips to the chair and make sure they don't lean or fall backward
- The stroke survivor can then wiggle hips back into the chair (they may need assistance to make sure the affected hip is positioned correctly)

Transfer to the affected side (more difficult)

- A stroke survivor who transfers with the assistance of two people will find moving to the weak side very difficult, so transferring to the unaffected side is preferred to make the transfer easier and safer. However, in cases like transferring on or off the toilet in a small washroom, it cannot be avoided and it is important for their recovery to learn to transfer in both directions.
- Ensure that the stroke survivor is strong enough and stable enough to perform a transfer to the weak side (i.e., sufficient trunk and leg strength, sufficient balance and sufficient awareness of the environment and body on the affected side).
- Be prepared to offer more assistance to initiate the turn and the descent to a sitting position.
- The sit-to-stand component is the same as other transfer.

One-person transfer

- Once the patient is seated at the side of the bed, apply the transfer belt.
- Ask the stroke survivor to sit up tall and bring their nose over their knees.
- As in the other transfers, the balls of the feet must be under the knees, feet flat on floor and ready to accept weight.
- The survivor's hand(s) start out placed on the bed to assist by pushing off the bed then reaching toward the arm rest of the chair.
- If the survivor has sufficient energy: support the patient to stand and step around until they are standing in front of the chair and can feel the chair with the back of their strong leg. Support the patient as they lean forward, place the unaffected hand on the arm rest of the chair and then sit down. The survivor can wiggle and shift their hips back into the chair.
- The stroke survivor may need moderate or minimal assistance depending on their ability; be in front of them and be ready to offer assistance as needed.
- If the patient performs poorly and moderate help will not be sufficient to safely complete the transfer, sit the stroke survivor back down and get help from a colleague to perform a two-person transfer.

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