Mobility and Exercise, Physiotherapy: Module 5

Life After Stroke Education Series

COMMUNITY Stroke Rehabilitation TEAM

Stroke Network
Southwestern Ontario
Serving Erie St. Clair and South West LHINs

2024

Disclaimer

- SWOSN has created the following PowerPoint to support the delivery of stroke education for providers working in the Life After Stroke Programs. SWOSN would like to acknowledge the Community Stroke Rehab Teams for providing the initial iteration of this resource.
- Every effort has been made to ensure that the following information provided is accurate, up-to-date, and complete, but no guarantee is made to that effect. This is a reference resource designed as a supplement to, and not a substitute for, the expertise, skill, knowledge, and judgment of healthcare practitioners. For the most current recommendations always refer to the Canadian Best Practice Recommendations for Stroke Care at: www.strokebestpractices.ca
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Outline

- Role of the physiotherapist post stroke
- Elements of a rehab program
- Exercise types, intensity, red flags
- Positioning considerations in sitting
- Transfer strategies, types, equipment and tips
- Gait devices and mobility post stroke
- Mobility challenges: Managing tone and neglect
- Balance considerations and exercise precautions
- Falls management
- Online resources, best practice guidelines

What physiotherapists typically see stroke clients for:

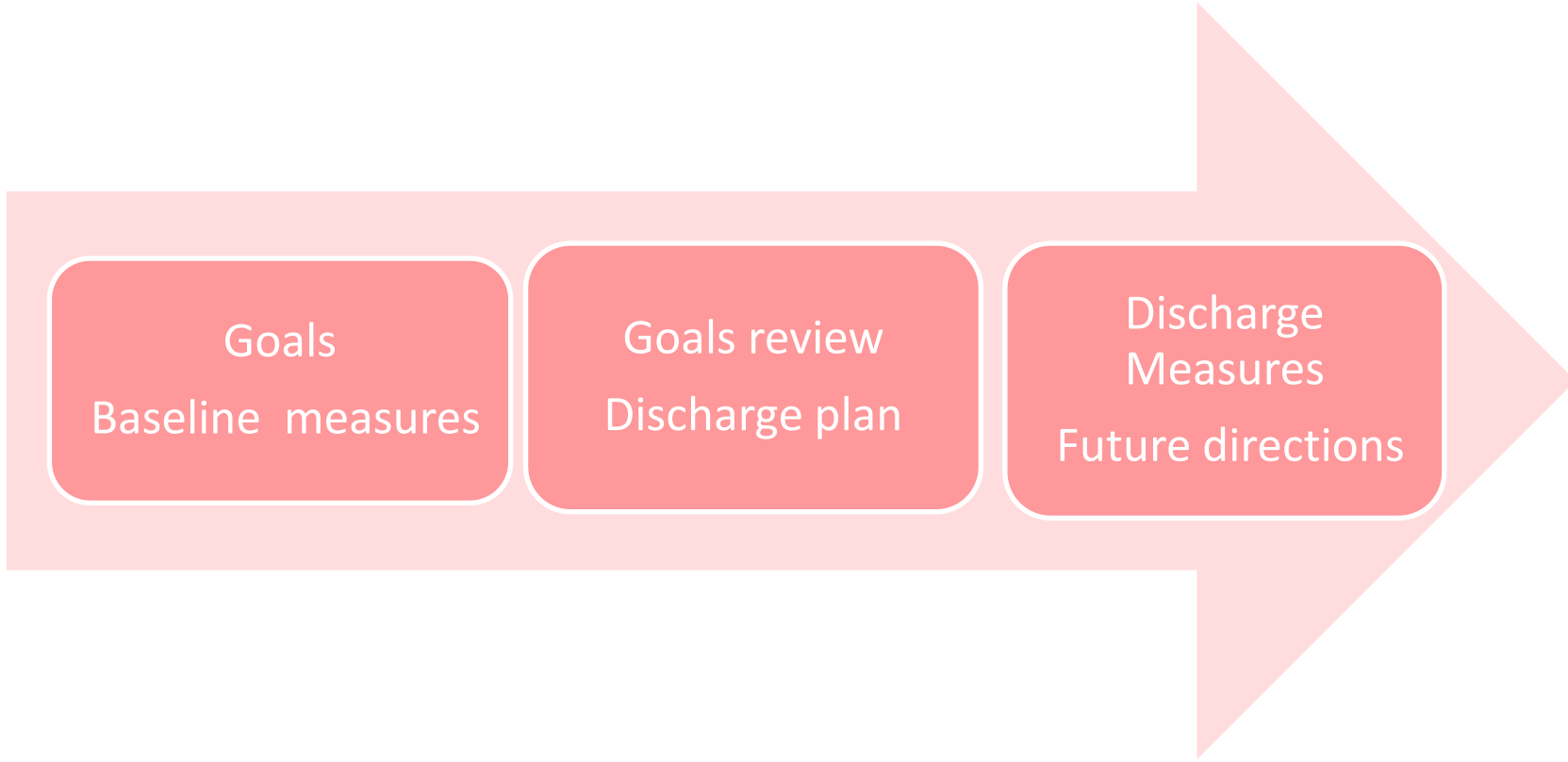
1. Functional mobility training/assessments
2. Gait training, gait aid prescription, bracing
3. Balance training, falls prevention
4. Strength and endurance exercises/training
5. Secondary stroke prevention education
6. Address pain
7. Outdoor mobility assessment/recommendations
8. Spasticity management
9. Vestibular dysfunction (additional training required)
10. Visual Syndromes affecting mobility (with OT)
11. Provide home exercise programs and promoting self management

Elements of a Rehabilitative Exercise Progam

Programming elements can be taken from the Ontario Stroke Network (OSN) guidelines.

1. Cardiovascular activity (NuStep, circuit training, walking program) 30 minutes
2. Balance activity (client's home program, FAME program or other- eg. Dual task activity) 20 minutes
3. Stretching 5 minutes

Rehabilitative Exercise Programs



Types of Exercise

1. **Endurance (aerobic)**
   Why? Improves heart and lung fitness, reduces fatigue and increases energy. Enhances neuroplasticity.
2. **Strength**
   Why? Increases your muscle strength so it is easier to do everyday things like climb stairs, get up from a chair.
3. **Balance and Coordination**
   Why? Makes it easier to move about, and reduces your risk of falls.
4. **Stretching**
   Why? Keeps your muscles relaxed and your joints mobile so that you can get dressed and reach for objects more easily.

Strength, Balance, Coordination Exercise Progression

- Sets
- Reps
- Hold Time
- Frequency
- Positioning
- Typically pre-determined by PT in home exercise program and client is given suggestions re: progression based on function and symptom monitoring/tolerance.

How Hard?
General Recommendations

- Several different versions of the Perceived Exertion scale exist (be aware of which scale your client is using or provide a copy for client to refer to)
- Initially, start at a light intensity of about 3 or 4 on a scale of 10. (May need to start lower for client's with other comorbid health conditions i.e. COPD, cardiac concerns etc.)
- Build gradually towards a moderate intensity of about 4 or 5.

Consider aphasic clients and sort out a safety strategy for communicating during group or individual exercise

How Hard?
General Recommendations

Rating of Perceived Exertion Chart
(Cardiovascular Endurance)

#10 	I am dead!!!
#9 	I am probably going to die!
#8 	I can grunt in response to your questions and can only keep this pace for a short time period.
#7 	I can still talk but I don't really want to and I am sweating like a pig!
#6 	I can still talk but I am slightly breathless and definitely sweating.
#5 	I'm just above comfortable, I am sweating more and can talk easily.
#4 	I'm sweating a little, but I feel good and I can carry on a conversation comfortably.
#3 	I am still comfortable, but I'm breathing a bit harder.
#2 	I'm comfortable and I can maintain this pace all day long.
#1 	I'm watching TV and eating bon bons.

Signs & Symptoms Which Require Participant to IMMEDIATELY STOP Exercising

- Pain (especially chest pain/angina)
- Tightness, heaviness &/or radiation of discomfort towards jaw or arm
- Cold or clammy skin
- Excessive or unusual shortness of breath
- Dizziness or light-headedness
- Nausea, vomiting or severe headache

→high blood pressure is a contraindication to exercise

Supporting Mobility Challenges

- Know how stroke affects a person's ability to move.
- Make your safety and theirs a priority. Use proper positioning and safe transfer techniques.
- Cue verbally and/or manually if required.
- Balance rest and activity.
- Use short, simple directions when facilitating an exercise.
- Ask for help if you need it.
- Encourage the person to participate as much as possible.

Proper Sitting Position

- When a person who has had a stroke is sitting, whether in a chair or a wheelchair, their hips should be back and centered
- Hips often slide forward in a chair, creating a slumped posture.
- Use the 90 degree rule (hips and knees)
- Support affected arm
- Support affected leg
- For wheelchair bound clients, avoid static positions for extended periods of time, ensuring client engages in pressure relief strategies.
- Encourage the client to be active in repositioning themselves as much as able.

Posture and Sitting Position

Wheelchair seat is lowered so that the survivor's feet may rest on the ground.

Correct Positioning

Survivor sits with poor posture, sliding hips forward and leaning back so that their feet may reach the floor.

Incorrect Positioning

Transfer Strategies and Types

- With use of gait devices
- Low scoot, standing pivot
- Mechanical lifts (Hoyer, ceiling lift, sit to stand)
- Non-mechanical transfer devices i.e. pivot disc, sliding board, E-Z turn, Sara stedy

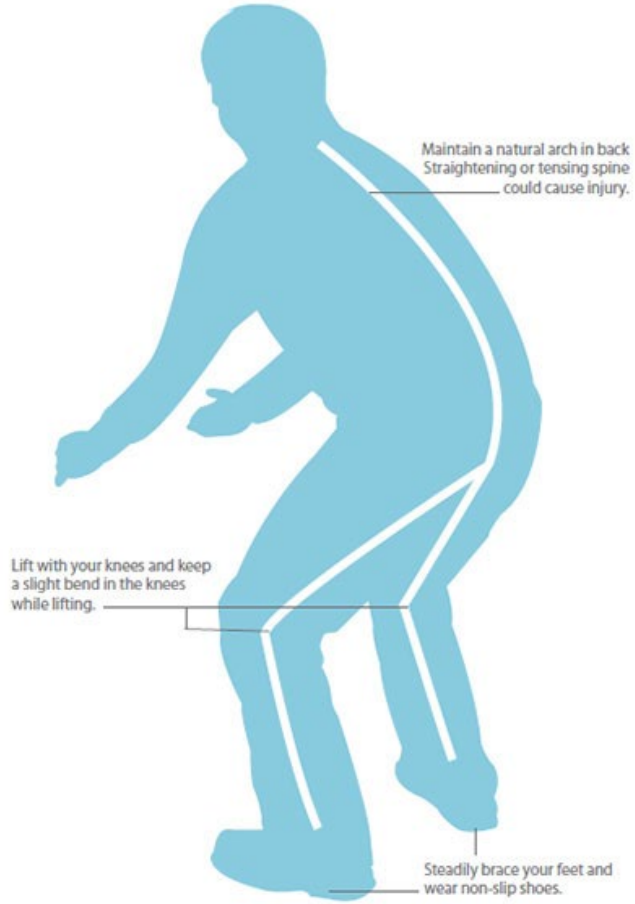
Transfer Examples

Wheelchair (W/C) bound clients:

E.g.: from W/C to NuStep

Often better going towards strong side for safety.

- Low scoot
- Standing pivot



Transfer Tips

EVERYTHING STROKE……at your fingertips

Key transferring principles: *for the Stroke Survivor and for YOU!*

- get area set up, brakes on, arm rest off, helper positioned, equipment in place, privacy maintained
- have them help as much as possible
- transfer to the unaffected side if you can
- give short step commands: clear & concise
- KNEES IN LINE WITH TOES!
- LEAN FORWARD AND KEEP IT!
- stop and start if you need to, be picky
- be in control of the descent
- don't be happy with the landing: reposition
- use two people when it is warranted
- use mechanical lift when it is warranted
- know the transferring abilities of the patient

Considerations:

- Use of transfer belt
- Use of walker
- Use of Ankle Foot Orthosis (AFO)
- Never pull on affected arm
- Fatigue
- Use of sling
- Use of wheelchair tray
- Functional progress being made
- Busy caseload
- Life after your shift

Transfer Tips Continued

- Prepare the environment
- Use recommended equipment
- Communicate clearly with the person, so they know what to expect:
  - Client is cued/assisted to move to the front of the chair
  - Client is cued/assisted to lean forward (nose over toes)
  - Feet are back and the client pushes off from arm(s) of chair
  - Caregiver typically will stand on the affected side to cue/assist client into standing

NEVER pull on or grab the affected arm or under the shoulders

Gait aids

- Quad cane
- Single point cane
- Urban Pole
- Standard walker/2 wheeled walker (2WW)
- Rollator walker (RW)

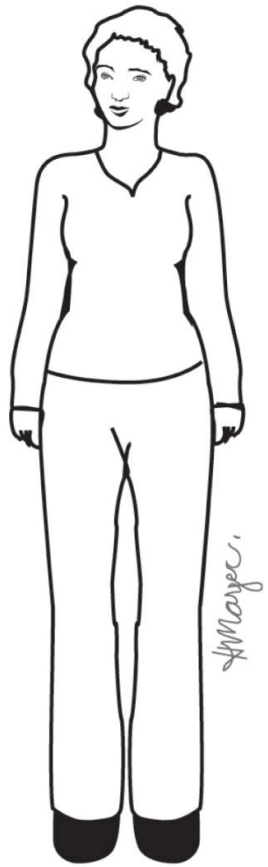
Walker Types

Ambulating with a Stroke Survivor

- Do not hold the affected arm
- Stay on the affected side

Postural Changes

EXAMPLE OF A STROKE SURVIVOR POSTURE



NORMAL POSTURE

Practical Considerations

- Supporting the affected arm

Sling use:

-painful shoulder

-pain + neglect

-typically used only during ambulation/transfers

(can vary based on client preference)

Supporting Mobility & Physical Functioning

Factors Affecting Movement following a Stroke:

- Fatigue and Pain
- Improper posture
- Loss of sensation
- Changes in muscle tone (flaccidity or spasticity)
- Changes in muscle strength
- Poor balance
- Changes in coordination
- Perceptual Problems (i.e. Spatial neglect, vision challenges)

Managing Neglect/Inattention

Visual: decreased awareness of the environment on the side of the body affected

- Strategies to support: visual and verbal cueing of environment, supervise or assist with transfers for safety

Body: decreased awareness of the body on the side affected

- Strategies to support: use cues to draw attention to the affected side, help position the limb so survivor can see it, provide sensory feedback

Promoting Use of the Affected Side During Exercise

- Room positioning (peers and leaders)
- Tactile cueing and support of the affected limb
- Biasing the affected limb (i.e. sit to stands, weight shifting, monitor for compensations, symmetry)

High Muscle Tone Considerations

- Tone may be a response to:
  - Fatigue (take breaks)
  - Overly challenging activity (modify task)
  - Reduced weight-bearing on affected side (reminder to shift weight)
  - Emotional stressors including poor sleep quality (mindfulness training)
  - Fear (reassurance, peer support)

Solutions to consider:

1. Stop the activity/exercise
2. Cue client to increase weight-bearing on affected side while standing or walking
3. Remind client to take rest breaks

Balance Impairments

- Poor balance makes transferring, standing and walking difficult and often unsafe.
- Stroke survivors will often have reduced balance in sitting and standing due to weakness and loss of trunk control
- Exercises will assist in improving balance and positioning and may include :
  - Sitting exercises upright in chair, working trunk muscles; reaching forward, side to side, trunk rotations
  - Bed exercises also assist with improving trunk control
  - Standing balance exercises include weight shifting side to side, stepping on a stool, stairs, or balance board use

NOTE: Exercise prescription should be set up and progressed by a trained physiotherapist

Balance Training

- Balance training programs are client specific and tailored to an individuals skill level and outstanding deficits
- Clients experiencing dizziness, postural hypotension (low blood pressure) would not be appropriate to continue with balance training if symptomatic
- Recommend referring to client's current home program for appropriate exercise routine suggestions
- A sturdy support surface is required at all times for client safety, many client's require standby (arms length supervision for safety)

Getting up from a Fall

1. Follow your facility's protocols or call 911 if unsure
2. General principles when assisting post fall
   - determine if there are any injuries
   - determine if there are any musculoskeletal limitations affecting mobility (i.e. prosthetic knee, rotator cuff tear)
   - make your client comfortable (pillow, blanket)
   - take your time and check/assess your environment
   - get second person as backup

Getting up from a Fall

Start position: client on back

Set a chair with arm rests next to them and have someone hold it.

1. Assist rolling onto strong side
2. Assist going into 4 point or 3 point kneel
3. Move into (half kneeling) position facing the chair/support surface. Typically leading up with stronger leg first- client may prefer to lead up with weaker leg.
4. Hand(s) on chair/sturdy object
5. Guide and stabilize client as they rise up. Assist client to turn and sit.
6. Variation: two chairs- use one to rise and second one to sit as soon as client is tall enough to reach.
7. Follow facility's protocol for notifications
8. Recommended to keep a record of falls in client's history

References

- https://mobilitydeck.com/different-types-of-walkers/
- www.heartandstroke.ca
- www.hypertension.ca
- www.strokebestpractices.ca
- www.ontariostrokenetwork.ca
- http://neurorehab.med.ubc.ca/fame/

Thank- You

You have now completed **Module 5: Mobility and Exercise**. For any questions, please contact SWOSN@lhsc.on.ca and/or contact your designated Community Stroke Rehabilitation Team Representative.