

FAME

*Fitness and Mobility
Exercise Program*

Considerations for stroke

Vancouver Coastal Health
GF Strong Rehabilitation Centre

HEART & STROKE FOUNDATION

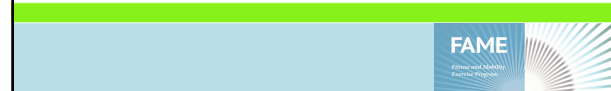
a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

1

1

Effects of stroke

- Aphasia
- Muscle weakness
- Spasticity
- Fatigue
- Reduced Balance
- Reduced Mobility and Walking
- Posture and Falls



FAME
*Fitness and Mobility
Exercise Program*

2

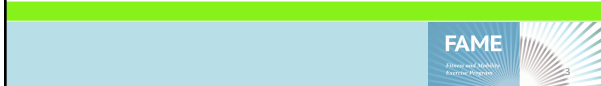
More Exercise Considerations

Considerations

- Muscle Weakness

Instructor Role

- Muscle strengthening & activation of weakened side is key
- Use functional strengthening
- Encourage participants to adopt proper sitting/standing postures
- Discontinue if abnormal movements cause pain/discomfort



FAME
*Fitness and Mobility
Exercise Program*

3

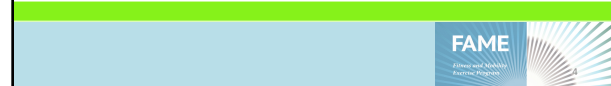
More Exercise Considerations

Considerations

- Spasticity
- Abnormal Tone
- Hypertonicity

Instructor Role

- Encourage participants to use their stroke-affected leg or arm as much as possible.
- Be mindful of exercises that may evoke spasticity
- Provide time & encourage participants to perform the movement
- Closely monitor participants
- Adjust exercises based on participant's ability (i.e. flexibility exercises)

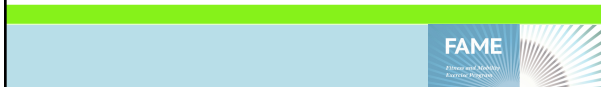


FAME
*Fitness and Mobility
Exercise Program*

4

Spasticity/Hypertonicity

- Hypertonicity (i.e. abnormally high tone) can present as:
 - Abnormal resistance when the limb is moved quickly (spasticity)
 - Stiffness of the muscles (rigidity)
 - Clonus of the ankle or wrist (repetitive beating)
 - Affected arm held in a fixed position (elbow flexed and turned inwards)
 - Affected leg rotated outwards when walking

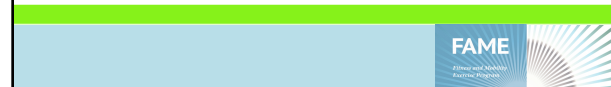


FAME
*Fitness and Mobility
Exercise Program*

5

Dealing with Spasticity

- Strengthening will not make it worse
- You may see an increase of spasticity with exertion – this is only temporary
- Movement does not have to look normal when practiced to be beneficial
- Use good sense. Strive for good posture and good biomechanics, but their movements will look different.



FAME
*Fitness and Mobility
Exercise Program*

6

More Exercise Considerations

Considerations

- Fatigue

Instructor Role

- Encourage frequent rest breaks
- Tell participant to seek physician advice if constantly fatigued
- Reduce exercise intensity (if needed)

FAME

Fitness and Mobility
Exercise Program

7

Exercise Considerations

Considerations

- Poor balance
- Increased falls risk

Instructor Role

- Need to supervise participants
- Prevent falls
- Provide support for participants to hold onto
 - Stable chair, rail

FAME

Fitness and Mobility
Exercise Program

8

More Exercise Considerations

Considerations

- Walking Impairments
- Reduced Mobility

Instructor Role

- Encourage walking activities despite abnormal-looking gait pattern
- If walking is causing joint pain, seek advice from health professional
- Be mindful of use of compensatory strategies (drop foot, knee hyperextension, circumduction)

FAME

Fitness and Mobility
Exercise Program

9

Falls

- 73% of individuals with stroke fall within 6 months following hospital discharge
- Average of 3.4 falls per person
- High fall frequencies far beyond 1-year post-stroke phase



FAME

Fitness and Mobility
Exercise Program

10

Fall Prevention

- Have a high instructor to participant ratio (1:4)
- Pay attention to over-exertion of participants
- Equipment modifications (i.e. non-slip pads for chairs)
- Create a predictable environment
- Use mobility aids & ankle foot orthosis (AFOs)
- Appropriate spotting

FAME

Fitness and Mobility
Exercise Program

11

Fall considerations

- Suggest hip protector if they have a history of falls or they have fallen in your class
- Have them hold back of chair or wall during exercises
- Predictable, controlled environments
- We found a competitive milieu (relay races) or tasks like ball tossing while standing can lead to falls. Significant gains can still be made in a controlled environment.



FAME

Fitness and Mobility
Exercise Program

12

Assistive Devices

- Regular cane or quad cane will be the most common assistive device
- We have had several participants bring their wheeled walker and coped well with that



FAME

Florida Motor Ability Modification Exercise Program

13



FAME

Florida Motor Ability Modification Exercise Program

14

Ankle foot orthoses (AFO)

- Prescribed to compensate for dropped foot (weakness of dorsiflexors to lift foot)
- Maintains ankle dorsiflexion, reducing spasticity, improves gait pattern and safety (do not catch toe)



FAME

Florida Motor Ability Modification Exercise Program

15

Ankle foot orthosis

- Participants should use their AFO if they have been prescribed one
- Participants often want to "throw away" AFOs if they feel they are improving. They feel that the AFO does not allow them to use their muscles properly. They should be assessed by a clinician (physical therapist, physician) before they do this



FAME

Florida Motor Ability Modification Exercise Program

16

More Exercise Considerations

Considerations

- Changes in Cognition
- Difficulty with attention & memory

Instructor Role

- Create routine
- Introduce changes gradually
- Provide reminders
- Focus on safety

FAME

Florida Motor Ability Modification Exercise Program

17

More Exercise Considerations

Considerations

- Bladder & Bowel Dysfunction

Instructor Role

- Ensure participants know where restrooms are located
- Encourage caregiver/family member to attend class if participant requires assistance

FAME

Florida Motor Ability Modification Exercise Program

18

More Exercise Considerations

Considerations

- Changes to speech, language & facial expression
- (Aphasia – a language problem)



Instructor Role

- Agree on set of understood gestures or use index cards/visuals
- Check-in with participants frequently to monitor how they are feeling
- Monitor pain levels frequently

FAME

Fitness and Mobility
Exercise Program

19

Communication Strategies

- Speak slowly & clearly, not louder
- Speak in shorter sentences
- Speak respectfully and be patient
- Agree on understood gestures
- Aphasia is rarely a problem in an exercise class as they can follow the actions. It may help to use index cards, single words or pictures to indicate pain or fatigue

FAME

Fitness and Mobility
Exercise Program

20

More Exercise Considerations

Considerations

- Neglect

Instructor Role

- Cue participants to be aware of neglected side
- Adjust movements
- Integrate exercises at midline

FAME

Fitness and Mobility
Exercise Program

21

Painful shoulder

- Caused from muscle weakness so that shoulder “droops” or “subluxes”
- Stretches joint structures, impinges tendons and bursae during movement
- Shoulder becomes aggravated and pain persists

FAME

Fitness and Mobility
Exercise Program

22

Slings



FAME

Fitness and Mobility
Exercise Program

23

Dealing with painful shoulder

- A vulnerable joint
- Some clients may wear a sling to reduce pain
- **Avoid pulling on arm**
- Encourage bilateral movements with safe mechanics
 - e.g. During arm raises, hold on to paretic arm

FAME

Fitness and Mobility
Exercise Program

24

Dealing with painful shoulder

- We have found that often participants have mild shoulder pain following exercise in the first 1-2 weeks, but this resolves with continued use
- If pain persists, see their physician
- Overhead pulleys are not recommended

FAME

Fitness and Mobility
Exercise Program

25

REFLECTION/DISCUSSION

- Another stroke FAST
- When would you call 911?

Face is it drooping?
Arms can you raise both?
Speech is it slurred or jumbled?
Time to call 9-1-1 right away.

FAME

Fitness and Mobility
Exercise Program

26

Carers

- Carers can help their participant if:
 - Sufficiently fit and not a major size smaller than participant
 - Have experience providing assistance/transfers
 - Should not be lifting, but providing stand-by spotting or guidance
 - Have them stand close to the participant with hands close to trunk
 - Ensure the carer understands their role (eg, needs to be standing with participant at all times and actively engaged)

FAME

Fitness and Mobility
Exercise Program

27