

EXERCISE PROGRAMME

This exercise programme will be offered twice a week for 8 weeks and is approximately 1 hour in length. It has been designed for persons living with chronic stroke who: reside in the community, can ambulate at least 10 metres with or without a gait aid, are able to perform standing exercises while holding onto a support, have no significant cognitive impairment, and have the ability to self-monitor with respect to warning signs of over-exertion. Participants will be screened by a physiotherapist (or another health care professional with experience in stroke) for inclusion in the exercise class and will require the consent of a physician to participate. Information will be provided to the instructor regarding restrictions or co-morbidities which may influence participant ability to exercise.

The exercise programme is designed to flow from one exercise or group of exercises to another ensuring the smoothest transition possible. Exercises have been sequenced in a particular order to include the major muscle groups, minimize transitional movements, and minimize chance of injury to the participants.

Proposed Format

Total Staff to Participant Ratio = 1:4

Supervision: 1 trained fitness facilitator, 2 volunteers

Participants: Maximum 12

Facility: Large, multi-purpose room at community fitness centre with accessible parking and washrooms, on-site first aid response team

Equipment: 16 chairs, 4 steps (3 levels, as in step-aerobic classes), 2 laundry baskets with assorted items used in activities of daily living for “Stand, walk and carry” exercise, masking tape, styrofoam cup, colour-coded targets for reaching tasks, Borg chart

Whole group format: Warm Up, Cool Down, Task-Oriented Strengthening/Cardiovascular Conditioning

Circuit format: Mobility/Balance

1. Warm Up (10 minutes)	3. Mobility and Balance 3 stations (20 minutes total; 6 minutes per station)
a. Sitting/ Standing Posture	a. Stand, Walk and Carry (Station 1)
b. Controlled Deep Breathing	b. Forward Tap-ups or Step-ups (Station 2)
c. Upper Extremity Exercises	c. Side Tap-ups or Step-ups (Station 2)
d. Ankle Mobility	d. Reaching and Weight Shifting (Station 3)
e. Marching on the Spot	e. Activities to Challenge Balance (Station 3)
2. Task-Oriented Strengthening and Cardiovascular Conditioning (20 minutes)	4. Cool Down (10 minutes)
a. Walking	a. Controlled Deep Breathing
b. Sit to Stand	b. Hamstring Stretch
c. Heel Raises	c. Trunk Rotation Stretch
	d. Calf and Hip Stretch

Section	<i>WARM UP (whole group activity)</i>
Name of Exercise	<i>Sitting/ Standing Posture</i>
Instructions	<p>Sitting Posture</p> <ol style="list-style-type: none"> 1. Sit tall in a chair with feet flat on the floor 2. Tighten your abdominal muscles (pull belly button in toward your spine) 3. Keep head directly over shoulders, and shoulders directly over hips 4. Bring shoulder blades down and back (like tucking your shoulder blades in your back pockets) 5. Tuck chin in and look straight ahead (like closing a drawer) 6. Attempt to check your posture as you begin to perform each exercise <p>Standing Posture</p> <ol style="list-style-type: none"> 1. Stand tall with feet flat on floor and slightly apart 2. Keep head directly over shoulders, and shoulders directly over hips 3. Tighten your abdominal muscles (pull belly button in toward your spine) and tuck in your bottom 4. Bring shoulder blades down and back (like tucking your shoulder blades in your back pockets) 5. Tuck chin in and look straight ahead (like closing a drawer) 6. Attempt to check your posture as you begin to perform each exercise <p>Special Notes:</p> <ol style="list-style-type: none"> 1. Prompt for sitting posture at beginning of warm up, and for standing posture prior to activities in a standing position 2. Reinforce optimal posture throughout the class
Common Errors & Suggested Corrections	<ol style="list-style-type: none"> 1. Shoulders rounded forward <ul style="list-style-type: none"> – Instruct to relax shoulders and to picture shoulder blades coming down together in a gentle ‘V’ shape (like tucking your shoulder blades in your back pockets) 2. As chin pulls back, head tips up or down <ul style="list-style-type: none"> – Instruct to pull chin straight back and to look straight ahead (like closing a drawer) 3. Participant sits slouched forward or to one side <ul style="list-style-type: none"> – Instruct to sit or stand tall with shoulders centered over hips
Rationale (Why?)	Proper posture provides the stability required for all activities and exercises

Section	<i>WARM UP (whole group activity)</i>
Name of Exercise	<i>Controlled Deep Breathing</i>
Instructions	<ol style="list-style-type: none"> 1. Sit with good posture 2. Slowly breathe in through your nose 3. Breathe in as deeply as possible 4. Slowly breathe out through your mouth 5. Repeat 5 times 6. Maintain good posture throughout <p>Progressions/Variations: If participant reports a need for more challenge and is able to perform the above exercise safely and without difficulty, they can try:</p> <ol style="list-style-type: none"> 1. Placing hand(s) on lower ribs or abdomen to feel the movement 2. Combining breathing in with raising* their arm(s) and then breathing out with lowering their arm(s) *use caution if participant experiences shoulder pain, remind to keep within their pain free limits when exercising <p>Special Notes:</p> <ol style="list-style-type: none"> 1. Remind participants that this is the desired technique to use throughout the exercise programme 2. If participant experiences dizziness, instruct them to stop and breathe with a normal pattern until dizziness subsides
Common Errors and Suggested Corrections	<ol style="list-style-type: none"> 1. Excessive movement of shoulders and upper chest <ul style="list-style-type: none"> – Instruct to relax chest and shoulders and focus on movement of lower abdomen and ribcage 2. Participant begins to hyperventilate <ul style="list-style-type: none"> – Instruct that breathing should be slow and controlled, both in and out
Rationale (Why?)	<p>To reinforce good breathing techniques which participants are encouraged to use throughout the programme</p> <p>Good breathing techniques relax shoulder and chest muscles making it easier to breathe and speak</p>

Section	<i>WARM UP (whole group activity)</i>
Name of Exercise	<i>Upper Extremity Exercise</i>
Instructions	<p>Choose a variety of activities and movements to warm up the shoulders, elbows, arms, wrists and fingers for exercise. Be creative. Some suggested activities can be seen in the accompanying video:</p> <ol style="list-style-type: none"> 1. Shoulder shrugs/ rolls 2. Lifting arm(s) forward 3. Lifting arm(s) sideways 4. Bending and straightening elbows, wrists, fingers 5. Passing a ball/ hoop/ other object around circle <p>Adaptations: If participant's arm has little or no active movement, the stronger arm can assist with completing the movement.</p> <p>Special Notes: During exercise instruct participants to:</p> <ol style="list-style-type: none"> 1. Remember to start each exercise with good posture, avoid slumping forward 2. Move only as far as they comfortably can, staying within a pain-free range of movement 3. Listen to their body and respect pain 4. Keep their arm movements at or below the level of their shoulders if their weaker arm needs help from the other arm to exercise 5. Keep palm up when raising arm forward or to the side

Section	WARM UP (whole group activity)
Name of Exercise	Ankle Mobility
Instructions	<ol style="list-style-type: none"> 1. Sit with bottom at the front of the chair 2. Stretch one leg out in front and rest heel lightly on the floor 3. Pump ankle up and down (like pressing the gas pedal) 4. Repeat 10 times 5. Repeat with opposite leg <p>Adaptations: If participant cannot complete the exercise with their weaker foot and/or is wearing a rigid (unhinged) <i>AFO or ankle brace</i>, encourage them to:</p> <ol style="list-style-type: none"> 1. Complete the exercise on their stronger side and imagine or picture their weaker foot performing the movement 2. Loosen the top strap of their AFO or ankle brace (to allow for ankle movement) and to slide their weaker foot under their chair, keeping heel on floor until they feel a stretch in their calf, hold for a count of 10 then slide foot forward. Ensure strap is tightened upon completion of exercise <p>Progressions/Variations:</p> <ol style="list-style-type: none"> 1. Tapping toes up and down (like tapping to the beat of the music) 2. Tapping heels up and down 3. Alternating tapping toe and then heel 4. Making full circles with their ankle 5. Performing ankle movements while holding foot off floor and keeping knee straight <p>Special Notes:</p> <ol style="list-style-type: none"> 1. Participants wearing an ankle brace or AFO with hinges can perform the ankle pumping exercise and all progressions except ankle circles
Common Errors & Suggested Corrections	<ol style="list-style-type: none"> 1. Moving entire leg in circles <ul style="list-style-type: none"> – Instruct to move foot only. Movement occurs at ankle joint 2. Not making a full circle (for those participants with active movement but difficulty coordinating) <ul style="list-style-type: none"> – Instruct to think about slowly moving the ankle in all directions (up, down, left, right) and feeling a stretch in each direction 3. Slouching in chair, or demonstrating poor sitting posture <ul style="list-style-type: none"> – Remind to sit tall and maintain good posture
Rationale (Why?)	Warms up the ankle joint for exercise

Section	WARM UP (whole group activity)
Name of Exercise	Marching on the Spot
Instructions	<ol style="list-style-type: none"> 1. Stand beside a chair with feet shoulder-width apart 2. Begin marching on the spot 3. Let arm(s) swing naturally with your leg movements 4. Continue stepping for 1 minute <p>Adaptations: If participant is unable to perform exercise in a safe and controlled manner they can try:</p> <ol style="list-style-type: none"> 1. Marching or stepping only as long as possible 2. Standing beside the chair and holding on with one hand 3. Standing behind the chair and holding on with both hands <p>Progressions/Variations: If participant reports a need for more challenge and is able to perform the above exercise safely and without difficulty they can try:</p> <ol style="list-style-type: none"> 1. Varying their step height – march with higher steps 2. Varying their step width - march with wider steps, narrower steps 3. Increasing the speed – march with quicker steps <p>Special Notes:</p> <ol style="list-style-type: none"> 1. If participant is using chair, walker, or cane for balance, prompts regarding arm swing are not applicable; instruct participant to have hand(s) resting lightly on their support
Common Errors & Suggested Corrections	<ol style="list-style-type: none"> 1. Poor posture <ul style="list-style-type: none"> – Remind to keep tall standing posture during marching 2. No arm swing <ul style="list-style-type: none"> – If balance permits, encourage gentle swinging of arm(s) with leg movement 3. <i>Hyperextension</i> of weaker knee <ul style="list-style-type: none"> – Instruct to prevent knee from snapping back by keeping a very slight bend in the knee 4. Leaning toward stronger side, decreasing use of weaker leg <ul style="list-style-type: none"> – If balance permits, instruct to keep midline of body centered between hips, and use both legs equally – If this is challenging to do unsupported, encourage participant to hold chair while attempting to correct
Rationale (Why?)	Helps warm the body up for exercise

Section	Cardiovascular Conditioning (whole group activity)
Name of Exercise	Walking
Instructions	<ol style="list-style-type: none"> 1. Four chairs are placed in a large square 10 metres (33 ft) apart 2. Spread participants out around the square (avoid a mass start) 3. Participants are instructed to walk at a comfortable pace around the perimeter of the chairs 4. Remind participants to use their gait aid if applicable 5. Instruct participants to keep a safe distance from one another to avoid collisions 6. Instruct faster participants to pass on the outside of the route <p>A total of 10 minutes will be spent walking (For example: 5 minutes walking, switch to sit to stand exercise, 5 minutes walking, finish with heel raises)</p> <p>Guidelines for intensity: Participants should be able to converse comfortably, with little effort, while exercising.</p> <p>Borg Rating of Perceived Exertion (10 Point) Scale*: *refer participants to Borg chart posted on the wall. Participants are encouraged to walk at a level of exertion corresponding to 3-4/10 (moderate to somewhat strong). Participants are instructed NOT to exercise at a level equal to or greater than 5/10 (strong) during the exercise programme.</p> <p>Progressions/Variations: If participant reports a need for more challenge and is able to perform the above exercise safely and without difficulty they can try:</p> <ol style="list-style-type: none"> 1. Walking a loop around each chair before heading to the next chair* *cue to stop if feeling dizzy 2. Walking while talking to another participant 3. Walking and reading signs posted on the walls 4. Increasing speed in sections of the route i.e. “walk as fast as you safely can between this chair and the next one” 5. Stepping over lines on the floor <p>Special Notes:</p> <ol style="list-style-type: none"> 1. As participants become more fatigued they are at an increased risk for falls – if a decrease in the quality of walking or imbalance is noted, participants should be encouraged to sit and rest 2. If the exercise room does not have space for a 10 m square route, use an area outside the exercise room that is free of obstacles and that can be easily supervised (such as a wide corridor). Chairs should be available for rests as required

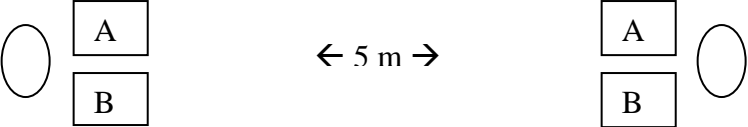
Walking (continued)

Common Errors & Suggested Corrections	<ol style="list-style-type: none"> 1. Poor posture <ul style="list-style-type: none"> – Remind to keep tall standing posture during walking 2. No arm swing (not applicable for those using walkers) <ul style="list-style-type: none"> – Encourage gentle swinging of arm(s) with leg movement throughout walking time 3. Walking too quickly / over exerting <ul style="list-style-type: none"> – Remind participants that if their breathing is laboured or difficult, they should sit and take a short rest to catch their breath or walk at a slower pace 4. Step width too narrow (participant stepping on own feet) <ul style="list-style-type: none"> – Instruct to keep feet further apart to avoid tripping 5. Toes of weaker foot catch on floor <ul style="list-style-type: none"> – Instruct to focus on striking the ground with the heel first, followed by the toes (a heel-toe pattern), encourage lifting toes and clearing weaker foot – Provide increased supervision and/or encourage rest if toes are catching more frequently and unable to correct, as participant is at increased risk for falls 6. <i>Hyperextension</i> of weaker knee <ul style="list-style-type: none"> – Instruct to prevent knee from snapping back by keeping a very slight bend in the knee
Rationale (Why?)	<p>Increased independence in <i>activities of daily living</i> Increase walking speed/efficiency Improve tolerance for prolonged physical activity</p>

Section	<i>TASK-ORIENTED STRENGTHENING (whole group activity)</i>
Name of Exercise	<i>Sit to Stand</i>
Instructions	<ol style="list-style-type: none"> 1. Sit in a chair (with armrests) with feet flat on the ground 2. Bottom may: <ol style="list-style-type: none"> a. Be placed at the front half of the seat (easier) b. Be placed fully against the chair back (harder) 3. Place your feet slightly behind the knees 4. Hand(s) may: <ol style="list-style-type: none"> a. Be placed on armrests (easiest) b. Be placed on thighs c. Not used at all (hardest) 5. Move your shoulders forward and stand up – “shoulders or nose over toes” 6. Slowly lower your hips back down onto the chair. Do not “plunk” down 7. Repeat 10 times, taking rests as required between repetitions 8. If able, repeat up to 3 times for a total of 30 repetitions with rests between sets of 10 as needed <p>Adaptations: If participant is unable to perform exercise in a safe and controlled manner they can try:</p> <ol style="list-style-type: none"> 1. Placing a chair in front of them for safety, to assist with balance upon standing if required 2. Completing only as many repetitions as possible 3. Rising only partially using hand(s) on armrests 4. Using a higher chair or cushion 5. Rocking trunk forward before attempting to stand 6. Placing the back of their chair against the wall before attempting to stand <p>Progressions/Variations: If participant reports a need for more challenge and is able to perform the above exercise safely and without difficulty they can try:</p> <ol style="list-style-type: none"> 1. Using a lower chair 2. Increasing the speed of their repetitions 3. Holding an object in their hand(s) when performing the task 4. Lightly touching their bottom down onto a plastic cup placed on seat and standing back up (cue not to crush the cup) 5. Placing their weaker foot further back than their stronger foot 6. Sit, stand and walk around chair between each repetition <p>Special Notes:</p> <ol style="list-style-type: none"> 1. If participant is wearing an <i>AFO or ankle brace</i>, they may be unable to place their weaker foot further back than their stronger foot 2. ☹️ Use caution if participant has knee arthritis

<p>Common Errors and Suggested Corrections</p>	<ol style="list-style-type: none"> 1. Leaning towards stronger side <ul style="list-style-type: none"> – If balance permits, instruct to try keep midline of body centred between hips and use both legs equally 2. Weaker foot is in front of stronger foot <ul style="list-style-type: none"> – Instruct to place weaker foot even with or slightly further back than stronger foot 3. Bracing legs against chair and/or leaning back while standing <ul style="list-style-type: none"> – Instruct to slide bottom forward to front of chair and bend forward (shoulders over knees) while pushing to stand 4. Looking at floor while performing task <ul style="list-style-type: none"> – Instruct to look at a point on the wall at eye level during exercise 5. Quickly “plunking” down into chair <ul style="list-style-type: none"> – Emphasize slowly lowering into chair – Instruct to use hand(s) to assist lowering into chair – Instruct to use a higher chair or cushion on the seat 6. <i>Hyperextension</i> of weaker knee <ul style="list-style-type: none"> – Instruct to prevent knee from snapping back by keeping a very slight bend in the knee
<p>Rationale (Why?)</p>	<p>Strengthens the muscles involved in the every day task of rising from a chair and reinforces sitting back down safely</p>

Section	<i>TASK-ORIENTED STRENGTHENING (whole group activity)</i>
Name of Exercise	<i>Heel Raises</i>
Instructions	<ol style="list-style-type: none"> 1. Stand tall behind a chair with feet shoulder width apart 2. Rest hand(s) on back of chair for support and balance, emphasize relaxed arm(s) and lightly resting hand(s) on back of chair 3. Lift heels off floor as high as you can 4. Lower heels back down to floor in a controlled manner 5. Repeat 10 times 6. If able, repeat up to 3 times for a total of 30 repetitions with rests between sets of 10 as needed <p>Adaptations: If participant is unable to perform exercise in a safe and controlled manner they can try:</p> <ol style="list-style-type: none"> 1. Completing only as many repetitions as possible 2. Holding on to a chair that is pushed against the wall for increased stability 3. Performing a modification of the exercise in sitting – instructing participant to lift their heels off the floor and tap them down <p>Progressions/Variations: If participant reports a need for more challenge and is able to perform the above exercise safely and without difficulty they can try:</p> <ol style="list-style-type: none"> 1. Increasing the speed of their repetitions 2. Performing the heel raises on one leg at a time <p>Special Notes:</p> <ol style="list-style-type: none"> 1. Participants wearing a rigid <i>AFO</i> or <i>ankle brace</i> can perform this exercise with movement occurring mainly in stronger leg 2. Participants wearing an ankle brace or AFO with hinges can complete this exercise
Common Errors & Suggested Corrections	<ol style="list-style-type: none"> 1. Rocking back onto heels <ul style="list-style-type: none"> – Instruct to lower down onto flat feet 2. Rocking forward onto arm(s) <ul style="list-style-type: none"> – Instruct to push straight up onto toes 3. Using arms to assist movement by pushing down on back of chair <ul style="list-style-type: none"> – Remind participant that chair should only be used for light support and balance 4. Uncontrolled, fast lowering of heels <ul style="list-style-type: none"> – Instruct to lower slower in a controlled manner 5. Heel of stronger leg lifts higher <ul style="list-style-type: none"> – Encourage to push up equally with both legs 6. Leaning toward stronger side <ul style="list-style-type: none"> – If balance permits, instruct to keep midline of body centered between hips and use both legs equally
Rationale (Why?)	Strengthens calf muscles for stair climbing and walking

Section	<i>MOBILITY (circuit activity - station 1 – max 4 participants)</i>
Name of Exercise	<i>Stand, Walk, and Carry</i>
Instructions	<p>Station Set Up: Place 2 chairs side by side facing a second set of 2 chairs 5 metres (16 feet) away.</p>  <p>Behind each set of chairs, place a laundry basket containing a reusable grocery bag (fabric or heavy plastic) and common household objects (i.e. plastic mugs, tray, ball, magazine, purse, can, jar, or tools such as a hammer or wrench).</p> <ol style="list-style-type: none"> 1. Sit in a chair 2. Stand up and pick up one of the items from the basket 3. The grocery bag can be used to help carry the object 4. Carry* the object toward the opposite chair, using walker or cane as necessary 5. Place the item into the basket on the floor 6. Sit down <p>For safety purposes and to avoid congestion, only 2 participants should attempt this activity at a time. For example, if there are 4 participants at the station, they will participate as 2 teams. Team members should sit in chairs facing each other. See diagram above, A ↔ A, B ↔ B.</p> <p>One team will complete the activity, while the other team rests. The teams will alternate after each repetition for the duration of the 5 minute station.</p> <p>Adaptations: If participant is unable to perform exercise in a safe and controlled manner, they can try:</p> <ol style="list-style-type: none"> 1. Placing laundry basket up on a chair 2. Holding onto a chair as they reach for item <p>Progressions/Variations: If participant reports a need for more challenge and is able to perform the above exercise safely and without difficulty they can try:</p> <ol style="list-style-type: none"> 1. Carrying objects on a tray

	<p>Special Notes:</p> <ol style="list-style-type: none"> 1. Participant may use different methods to carry* the item: <ol style="list-style-type: none"> a. If participant is using a 4-wheeled walker, they should put the item on the seat or in the basket of the walker. If the walker does not have a seat or basket, the item should be placed in the grocery bag and the handle looped around the participant's wrist b. If participant is using a cane with their stronger hand, they should put the item in the grocery bag <ol style="list-style-type: none"> i. If the arm is completely <i>flaccid</i> (limp) the bag can be held in their stronger hand or looped around their stronger wrist ii. If the weaker arm or hand has some active movement, the bag can be held in the weaker hand, or looped over the weaker arm 2. ☹ Use caution if participant has back pain or osteoporosis of the spine
<p>Common Errors and Suggested Corrections</p>	<ol style="list-style-type: none"> 1. Participant twists spine when bending to pick up item <ul style="list-style-type: none"> – Instruct to avoid twisting by stepping directly in front of (or facing) the item before bending down <p>See also “Common Errors and Suggested Corrections” in the Sit to Stand and Walking exercises.</p>
<p>Rationale (Why?)</p>	<p>Strengthens leg muscles and improves balance and coordination, helping completion of everyday activities such as carrying objects Increases independence in <i>activities of daily living</i> Improves tolerance for prolonged physical activity</p>

Section	<i>MOBILITY (circuit activity - station 2 – max 4 participants)</i>
Name of Exercise	<i>Forward Tap Ups or Step Ups</i>
Instructions	<ol style="list-style-type: none"> 1. Stand tall with a step placed directly in front of you 2. Tap the left foot forward up onto the step 3. Slowly lower left foot backward off of step to original starting position on the ground 4. Tap the right foot forward up onto the step 5. Slowly lower right foot backwards off of step to original starting position on the ground 6. Repeat 10 times for each foot taking rests as required between repetitions 7. If able, repeat up to 3 times for a total of 30 repetitions with rests between sets of 10 as needed <p>Adaptations: If participant is unable to perform exercise in a safe and controlled manner have them try:</p> <ol style="list-style-type: none"> 1. Completing only as many repetitions as possible 2. Holding on to a chair or the wall beside them for balance 3. Stepping on the ground <p>Progressions/Variations: If participant reports a need for more challenge and is able to perform the above exercise safely and without difficulty they can try:</p> <ol style="list-style-type: none"> 1. Progressing the difficulty of this exercise by adding one or two risers 2. Increasing the speed of their repetitions 3. Performing full step-ups: Stepping right foot up onto the middle of the step, then stepping left foot forward up on step to meet right foot. Lowering left foot down off of step to original starting position, then lowering right foot off of step to meet left foot on the ground 4. Stepping up and over step: Step forward up onto step from one side and then down to the floor on the other side <p>Special Notes:</p> <ol style="list-style-type: none"> 1. ☹ Use caution if participant has knee arthritis
Common Errors and Suggested Corrections	<ol style="list-style-type: none"> 1. Leaning toward stronger side <ul style="list-style-type: none"> – If balance permits, instruct to try keep midline of body centred between hips and use both legs equally 2. <i>Hyperextension</i> of weaker knee <ul style="list-style-type: none"> – Instruct to prevent knee from snapping back by keeping a very slight bend in the knee 3. Not placing entire foot on step when stepping up <ul style="list-style-type: none"> – Instruct that no portion of the foot is to be beyond the edge of the step 4. Forward bending of body during stepping up and down <ul style="list-style-type: none"> – Instruct to maintain a tall, upright posture throughout entire exercise 5. Stepping up or down too fast <ul style="list-style-type: none"> – Instruct slow, controlled lowering of foot during step down phase
Rationale (Why?)	Strengthens leg muscles for functional activities such as walking and stair climbing

Section	<i>MOBILITY (circuit activity - station 2 – max 4 participants)</i>
Name of Exercise	<i>Sideways Tap Ups or Step Ups</i>
Instructions	<ol style="list-style-type: none"> 1. Stand tall with a step placed directly next to you on the right hand side 2. Tap right foot sideways, up onto the step 3. Lower right foot sideways off of step to original starting position 4. Left foot will remain on the floor the entire time 5. Repeat 10 times 6. Turn around and repeat 10 times with left foot leading 7. If able, repeat up to 3 times for a total of 30 repetitions per side, with rests between sets of 10 as needed <p>Adaptations: If participant is unable to perform exercise in a safe and controlled manner have them try:</p> <ol style="list-style-type: none"> 1. Completing only as many repetitions as possible 2. Holding on to a chair or the wall beside them for balance 3. Stepping sideways on the ground <p>Progressions/Variations: If participant reports a need for more challenge and is able to perform the above exercise safely and without difficulty they can try:</p> <ol style="list-style-type: none"> 1. Progressing the difficulty of this exercise by adding one or two risers 2. Increasing the speed of their repetitions 3. Performing a full sideways step-up: Stepping right foot up onto the middle of the step, then step left foot sideways up on step to meet right foot. Lower left foot sideways off of step to original starting position, then lower right foot off of step to meet left foot on the ground 4. Stepping sideways up and over step: Step up onto step from one side and then down to the floor on the other side <p>Special Notes:</p> <ol style="list-style-type: none"> 1. ☹ Use caution if participant has knee arthritis
Common Errors and Suggested Corrections	<ol style="list-style-type: none"> 1. Leaning toward stronger side <ul style="list-style-type: none"> – If balance permits, instruct to try keep midline of body centred between hips and use both legs equally 2. <i>Hyperextension</i> of weaker knee <ul style="list-style-type: none"> – Instruct to prevent knee from snapping back by keeping a very slight bend in the knee 3. Not placing entire foot on step when stepping up <ul style="list-style-type: none"> – Instruct that no portion of the foot is to be beyond the edge of the step 4. Forward or sideways bending of body during stepping up and down <ul style="list-style-type: none"> – Instruct to maintain a tall, upright posture throughout entire exercise 5. Stepping up or down too fast <ul style="list-style-type: none"> – Instruct slow, controlled lowering of foot during step down phase
Rationale (Why?)	Strengthens leg muscles for functional activities such as walking and stair climbing

Section	<i>BALANCE (circuit activity - station 3 - max 4 participants)</i>
Name of Exercise	<i>Reaching and Weight Shifting</i>
Instructions	<p>Station Set-Up: Tape a large "X" on the wall at approximately shoulder height. Tape targets on a wall in a circle around the "X" at 12:00, 2:00, 4:00, 6:00, 8:00, and 10:00 positions. Targets will be colour coded and laminated: 6 Green = Easiest, placed in close proximity to the "X"; 6 Yellow = Harder, placed slightly further away from the "X"; 6 Red = Hardest, placed farthest from the "X"</p> <ol style="list-style-type: none"> 1. Position yourself so that you are slightly more than one arm's length from the wall directly in front of the "X" 2. Stand up tall with proper posture and feet shoulder width apart 3. Keep your feet in this position except for safety reasons i.e. to regain your balance 4. From the starting position, slowly reach as far as you safely can toward each Green target, shifting your weight as you reach 5. Slowly return to starting position 6. Repeat with other arm (if possible) 7. If participants are able to reach all Green targets safely and without difficulty, they can progress to reaching toward the Yellow and then Red targets as able <p>Adaptations: If participant is unable to perform exercise in a safe and controlled manner they can try:</p> <ol style="list-style-type: none"> 1. Completing only as many repetitions as possible 2. Holding onto a chair while reaching and weight shifting 3. Standing closer to the wall 4. Sitting in a chair and reaching at targets 5. Standing behind or beside a chair(s) (with or without holding on) and practice shifting weight from right to the left foot 6. Standing behind or beside a chair(s) (with or without holding on) with feet shoulder width apart and one foot in front of the other - practice shifting weight from forward to backward foot <p>Progressions/Variations: If participant reports a need for more challenge and is able to perform the above exercise safely and without difficulty they can try:</p> <ol style="list-style-type: none"> 1. Switching directions and reaching the targets in a counter clockwise direction 2. Reaching toward targets in any order 3. Moving their feet closer together when reaching 4. Reaching towards different targets at a quicker pace
Common Errors and Suggested Corrections	<ol style="list-style-type: none"> 1. Reaching too far and losing balance <ul style="list-style-type: none"> - Instruct participant to reach only as far as they safely can. Participants should be able to return to starting position in a controlled manner
Rationale (Why?)	Improves body awareness and balance for greater safety in standing, walking and performing functional tasks such as reaching for items on shelves or in cupboards

Section	<i>BALANCE (circuit activity - station 3 – max 4 participants)</i>
Name of Exercise	<i>Activities to Challenge Balance</i>
Instructions	<p>Station Set-Up: Post the names of the balance exercises on the wall. Participants can choose from these activities based on their ability. If participant reports a need for more challenge and is able to perform the exercise safely and without difficulty they can try one of the harder tasks.</p> <ol style="list-style-type: none"> 1. Stand facing the wall and beside a chair 2. Use the wall or chair if you require support to regain balance 3. Try a number of the balance activities from the pictures in front of you <p>The balance activities are listed below (in approximate order from easiest to hardest):</p> <ol style="list-style-type: none"> 1. Standing with eyes closed * 2. Standing with feet together (heels and toes touching)* 3. Standing and looking over your shoulders 4. Standing with one foot in front of the other (stride step)* 5. Stepping sideways for 5 m (16 ft) and return 6. Turning around in a circle, repeat in opposite direction 7. Standing with feet directly in front of one another - heel of front foot in line with toe of back foot (tandem stance)* 8. Standing on 1 foot only* 9. Walking backwards for 5 m (16 ft) and return 10. Walking on a line, heel of one foot, lined up with toe of other foot (as if on a balance beam) for 5 m (16 ft) and return 11. Stepping to the right by crossing left foot in front of the right foot, continue moving to the right by stepping sideways for 5 m (16 ft) and return crossing right foot in front of left foot <p>Exercises with * can be attempted to be held up to 30 seconds if possible.</p> <p>Adaptations: If participant is unable to perform exercise in a safe and controlled manner (without holding on to a support surface) they can try:</p> <ol style="list-style-type: none"> 1. Holding the chair or wall with 2 hands (easiest) 2. Holding the chair or wall with 1 hand (harder) 3. Holding the chair or wall with light touch support (hardest)
Common Errors and Suggested Corrections	<ol style="list-style-type: none"> 1. Losing balance and unable to independently recover balance <ul style="list-style-type: none"> – Instruct participant to only attempt exercises within their safe limit i.e. are able to recover independently from a loss of balance – Instruct participant to try a less challenging activity from the list – Remind participant to stand close to the wall or to stand behind or beside a chair (with or without holding on) for increased safety and support
Rationale (Why?)	Balance exercises can help to improve safety in performing everyday activities

Section	<i>COOL DOWN (whole group activity)</i>
Name of Exercise	<i>Controlled Deep Breathing</i>
Instructions	<ol style="list-style-type: none"> 1. Sit with good posture 2. Slowly breathe in through your nose 3. Breathe in as deeply as possible 4. Slowly breathe out through your mouth 5. Repeat 5 times 6. Maintain good posture throughout <p>Progressions/Variations: If participant reports a need for more challenge and is able to perform the above exercise safely and without difficulty, they can try:</p> <ol style="list-style-type: none"> 1. Placing hand(s) on lower ribs or abdomen to feel the movement 2. Combining breathing in with raising* their arm(s) and then breathing out with lowering their arm(s) <p>*use caution if participant experiences shoulder pain, remind to keep within their pain free limits when exercising</p> <p>Special Notes:</p> <ol style="list-style-type: none"> 1. Remind participants that this is the desired technique to use throughout the exercise programme 2. If participant experiences dizziness, instruct them to stop and breathe with a normal pattern until dizziness subsides
Common Errors and Suggested Corrections	<ol style="list-style-type: none"> 1. Excessive movement of shoulders and upper chest <ul style="list-style-type: none"> – Instruct to relax chest and shoulders and focus on movement of lower abdomen and ribcage 2. Participant begins to hyperventilate <ul style="list-style-type: none"> – Instruct that breathing should be slow and controlled, both in and out
Rationale (Why?)	<p>To reinforce good breathing techniques which participants are encouraged to use throughout the programme</p> <p>Good breathing techniques relax shoulder and chest muscles making it easier to breathe and speak</p>

Section	<i>COOL DOWN (whole group activity)</i>
Name of Exercise	<i>Hamstring Stretch</i>
Instructions	<ol style="list-style-type: none"> 1. Sit on a chair with feet flat on the ground 2. Move forward in chair to ensure bottom is at front half of seat 3. Keep left foot flat on floor and place right leg out straight with right heel resting on the floor 4. Sit up tall and lean forward while keeping your knee straight – lead from the chest, keep looking at your hands 5. Reach your arm(s) down towards your right foot. You may use your hand(s) to hold your right knee straight if necessary 6. You will feel a stretch or pulling at the back of right leg 7. Hold for a count of 10, return to starting position 8. Repeat 3 times 9. Repeat 3 times with opposite leg <p>Special Notes:</p> <ol style="list-style-type: none"> 1. Participants should not experience low back or leg pain. Stretch only as far as is comfortable 2. Participants should be reminded to not move too far forward to minimize risk of sliding off the chair
Common Errors & Suggested Corrections	<ol style="list-style-type: none"> 1. Slouching while leaning forward <ul style="list-style-type: none"> – Emphasize sitting tall all the way through the movement 2. Knee bending on front leg <ul style="list-style-type: none"> – Instruct to only lean as far forward as able while still keeping the knee straight (do not let the knee fall into <i>hyperextension</i>) 3. Poking chin out <ul style="list-style-type: none"> – Instruct to lean forward from the hips and upper trunk will follow
Rationale (Why?)	To gently stretch leg muscles after exercise

Section	<i>COOL DOWN (whole group activity)</i>
Name of Exercise	<i>Trunk Rotation Stretch</i>
Instructions	<ol style="list-style-type: none"> 1. Sit tall in a chair with bottom at back of chair, tighten your abdominal muscles and place feet firmly on the floor, shoulder width apart and evenly placed 2. Rest your hand(s) on your hips or fold them in front of your chest 3. Slowly turn your head, neck and trunk as far as you can to the right, while keeping your bottom in the chair 4. Hold for a count of 10, return to starting position 5. Repeat 3 times 6. Switch directions and rotate to the left <p>Special Note:</p> <ol style="list-style-type: none"> 1. ☹ Use caution if participant has back pain or osteoporosis of the spine
Common Errors & Suggested Corrections	<ol style="list-style-type: none"> 1. Not maintaining full contact between bottom and seat of chair <ul style="list-style-type: none"> – Instruct to turn as far as possible while maintaining full contact with chair 2. Slouching through lower back in chair <ul style="list-style-type: none"> – Instruct to “sit tall” in chair before beginning exercise 3. Weaker foot placed in front of stronger foot <ul style="list-style-type: none"> – Instruct to try to keep feet evenly placed on floor
Rationale (Why?)	Helps to gently stretch and relax all the muscles of the neck and spine after exercise.

Section	COOL DOWN (whole group activity)
Name of Exercise	Calf and Hip Stretch
Instructions	<ol style="list-style-type: none"> 1. Stand in front of a wall approximately one arm's length away 2. Place your hand(s) on the wall at shoulder height 3. Once steady, step back with left foot a comfortable distance, feet should be shoulder width apart 4. Keeping the left leg straight and your heel on the floor, gently bend your right knee and lean hips forward into the wall. You should feel a stretch in your left heel and calf and the front of your left hip. Hold for a count of 10 <p>Adaptations: If participant cannot place hand(s) comfortably at shoulder height then a choice from the following options can be selected:</p> <ol style="list-style-type: none"> 1. Place hand(s) on the wall at a comfortable height 2. Place elbow(s) on the wall at comfortable height 3. Place hand(s) on the back of a chair that is pushed up against a wall to avoid sliding away from participant <p>Special Notes:</p> <ol style="list-style-type: none"> 1. Participants wearing an ankle brace or AFO with hinges can complete the exercise without adaptations 2. Participants wearing a rigid (unhinged) <i>AFO or ankle brace</i> should be instructed to loosen the top strap to allow for ankle movement in the exercise (ensure strap is tightened upon completion of exercise)
Common Errors & Suggested Corrections	<ol style="list-style-type: none"> 1. Bending of back knee <ul style="list-style-type: none"> – Instruct to keep back leg straight 2. Hyperextension of back knee <ul style="list-style-type: none"> – Instruct to prevent knee from snapping back by keeping a very slight bend in the back knee 3. Heel of back leg comes up off floor <ul style="list-style-type: none"> – Instruct to keep heels on floor. May have to slide back foot forward until able to keep heel down 4. Toes pointing out to side <ul style="list-style-type: none"> – Instruct to keep toes pointing straight ahead. May have to slide foot forward until able to keep toes aligned 5. Feet placed too close together or legs crossed <ul style="list-style-type: none"> – Instruct to keep feet shoulder width apart 6. Bending forward from the waist with bottom sticking out <ul style="list-style-type: none"> – Instruct to keep trunk upright and move hips forward over toes while gently bending knees 7. Hips rotate when stepping forward <ul style="list-style-type: none"> – Instruct to keep hips squarely facing the wall
Rationale (Why?)	To gently stretch leg muscles after exercise