

Resistance Training (No Equipment)

Name: _____

Date: _____

Exercise Supervisor Contact: _____

How to do resistance training:

1. Do five minutes of slow walking and a stretching routine before and after resistance training. See pictures at end of document.
2. Do all exercises slowly and **breathe normally**. When you are performing an exercise, **raise your body weight to a count of 2 and lower your body weight to a count of 3.**
3. Do resistance training **2 to 3 times a week** with at least one day of rest in between workouts.
4. Take at least a 30 to 60 seconds rest between exercises.
5. **Stop** and talk to your health care professional if you have any problems carrying out this program.
6. Ask someone at home to help you with the exercises that require balance. The assistant should stand at your side, and if needed can correct any loss of balance by placing one hand on your hip.

Important words to know:

Repetition: Doing 1 complete exercise movement (such as 1 curl up)

Affected limb: The arm or leg most affected by the stroke

Non-affected limb: The arm or leg not affected by the stroke

Progression: Gradually making the exercise more difficult or adding more repetitions

Power up: Lifting the limb as fast as possible

What's the right intensity or effort level for me?

To find out if you are at the right intensity or level of effort, answer these questions:

- After doing the last repetition, do I feel that I can do 5 to 10 more repetitions?
If you answer yes, then the exercise is **too light or easy.**
- Am I struggling to complete the last repetition?
If you answer yes, then the exercise is **too hard.**
- After the last repetition, do I feel as if I could do 2 to 3 more repetitions and no more?
If you answer yes, then this is a **good starting level.**

How to progress so you can get stronger and gain more muscle:

1. When you can comfortably repeat an exercise 10 times, slowly increase the number of repetitions to 15. **This may take 2 to 4 weeks.**
2. When you can comfortably repeat an exercise 15 times, increase the difficulty level and reduce the repetitions to 10 (see the progression examples below).
 - a. There are examples of how to progress for each exercise. Check the tip included under each exercise picture.
3. Fill in your resistance training diary. Hand them in when you attend an exercise class or send them to your health care professional. Tracking your progress can help to keep you motivated.

Examples of progressing the exercises:

Note: People progress at different rates. This is an example only.

Step	Week	How many repetitions to do	Weight or resistance
A	2	10	No change in difficulty level.
B	3	12 to 13	No change in difficulty level.
C	4	13 to 15	No change in difficulty level.
D	5	10	Increase the difficulty level.*
----	8	Repeat steps B to D	-----

*Note: There are examples of how to increase the difficulty level for each exercise. Check the tip included under each exercise picture.

Arm Exercises:

- People post-stroke have a high prevalence of shoulder pain on the stroke side.
- There are multiple issues related to shoulder pain such as subluxation, spasticity, contractures, bursitis, tendonitis/tear, and adhesive capsulitis.
- Therefore, the affected-side arm and shoulder should be managed carefully, and conservatively.
- Communication with the treating therapist is essential when resistance training of the arm muscles is being prescribed.

Some people may be unable to perform the arm exercises (#2 and #4).

There are alternative arm exercises suggested at the end of the document.

Resistance Training Exercises

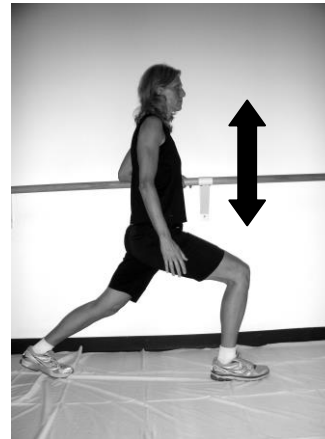
1) Static Lunge – ask someone to help you if needed

Benefit: Helps with walking and balance.

Start and End Position



Middle Position



1. If you need to, put one hand on counter or ledge for support.
2. Put one foot in front of the other.
3. Bend the front knee making sure that the knee does not go past the toes. If you experience pain or discomfort then **STOP** and see below for an alternative exercise.
4. Keep the same foot position as you slowly straighten the front leg. Repeat knee bend on the same leg 10 to 15 times.
5. Then repeat with the other leg 10 to 15 times keeping back straight.

Repeat up to 10 times on each leg; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 reps.

Tip:

- 1) If this is too difficult, only take a small step forward and bend the knee a quarter of the way.
- 2) To make this exercise more difficult take a longer step forward.

Static Lunge Options

If you have **knee pain** then **STOP** the exercise and replace it with one of the following shown at the end of the document.

1B) Thigh Press (easier) on page 17

1C) Leg Raise (a bit harder) on page 18

If this exercise is **too easy**, try exercise 1D Lunge (harder) on page 19

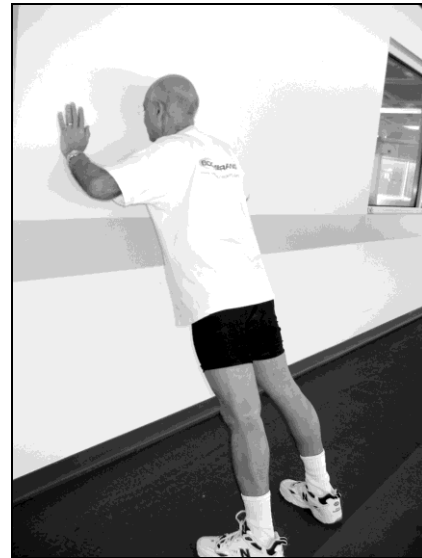
2) Wall Push Up – Do not perform this exercise if you have shoulder issues. See supplemental exercises for replacement.

Benefit: Makes chest, arm, abdominal, and lower back muscles stronger. Helps with pushing and shoving.

Start Position



End Position



1. Stand facing the wall with your feet placed slightly wider than shoulder width apart.
2. Put hands on the wall at shoulder height.
3. Gently lean forward. Then push back to start position making sure your back stays straight.

Repeat up to 10 times; stop when you feel you could do 2 to 3 more repetitions and no more.

Move closer to the wall if you cannot complete 10. As you get stronger, gradually increase to 15 repetitions.

Progression:

- 1) To make the exercise harder, place your feet further away from the wall.
- 2) Take the position lower by using a kitchen worktop to lean against.

Alternative Arm Exercises can be found on Pages 27 to 29

3) Half-Squat

Benefit: Improve balance and sitting to standing performance (such as getting out of a car)

Start and End Position



Stand with feet shoulder width apart.
Turn toes slightly out.

Put a chair behind you for safety.

Middle Position



Keeping your **feet flat on the floor**, push your buttocks back and bend at the hips to slowly lower your body so that your knees are almost at a 90-degree angle. Knees should not go past the toes.

Then stand up straight again.

Repeat up to 6 to 10 times (stop when it feels a bit more than hard).

As you get stronger, gradually increase until you can repeat 15 times.

Tips: If this is too difficult, only lower your body down a quarter of the way. Keep knees only slightly bent.

Keep your weight even over both legs. If you find the stronger leg doing most of the work, then place the weaker leg slightly behind the stronger leg.

If one knee collapses inwards, place a large ball between your knees while doing the exercise.

Progression:

1. Use less support by putting only two fingers on counter. Then try with no support.
 2. Hold 3 to 10 lb. weights at your side with a 'palms-in' grip. Do the exercise by keeping weights at your side. Or, put weights in knapsack.
 3. Slowly lower yourself down to the squat position, then POWER UP (stand straight again as fast as possible without losing balance).
-

If you have knee pain, replace this exercise with one shown at the end of the document (1B or C) or leave it out for now.

1B) Thigh Press (easier) on page 17

1C) Leg Raise (a bit harder) on page 18

4) Chair Dip

Benefit: Helps to build muscle and strength behind the arms and in the chest and shoulders.

The pushing motion will strengthen your arm muscles even if you are not able to raise yourself off of the chair seat.

Start and End Position



1. Place a sturdy chair with armrests against a wall and sit with your feet flat on the floor hip distance apart.
2. Grasp the arm rests and keep your elbows close to your body and not splayed out.
3. Lean slightly forward while keeping your back straight.
4. Push your body slowly off the chair.
5. Hold the position for 1 second and then slowly lower yourself down.

Repeat up to 10 times (stop when it feels a bit more than hard).

As you get stronger, gradually increase until you can repeat 15 times.

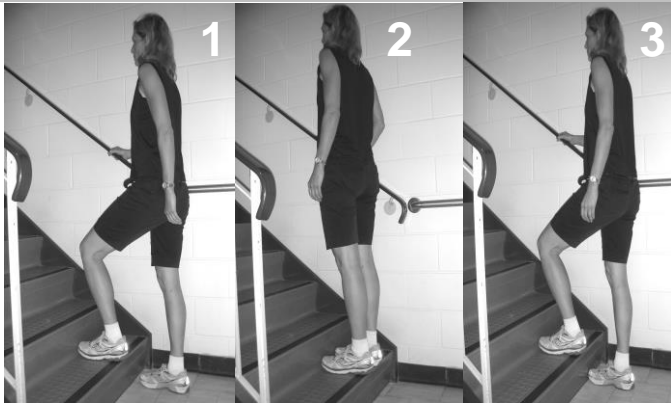
Tips:

- 1) If you are not able to raise yourself out of the chair then you can use your legs for assistance.
- 2) If you are not able to raise yourself, hold the pushing motion for 2 seconds as this will engage the muscles.

For alternative arm exercises seep pages 27 to 29

5) Stair Climbing – ask someone to help if needed

Benefit: Helps you with climbing stairs



1) Make sure you are standing up straight. Using the non-affected arm, hold the handrail for support.

Put one foot on the first step and the opposite foot on the ground.

2) Slowly bring the leg from the ground up. Put it beside the other leg on the first step. Try not to pull yourself up.

3) Slowly lower the same leg down to the ground and repeat 10 to 15 times.

Repeat up to 10 times on the right leg; stop when you feel you could do 2 to 3 more repetitions and no more.

Stop and rest

Repeat up to 10 times on the right leg; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 repetitions.

Progression: Place one foot on the second step and repeat the instructions above.

6) Heel Raises

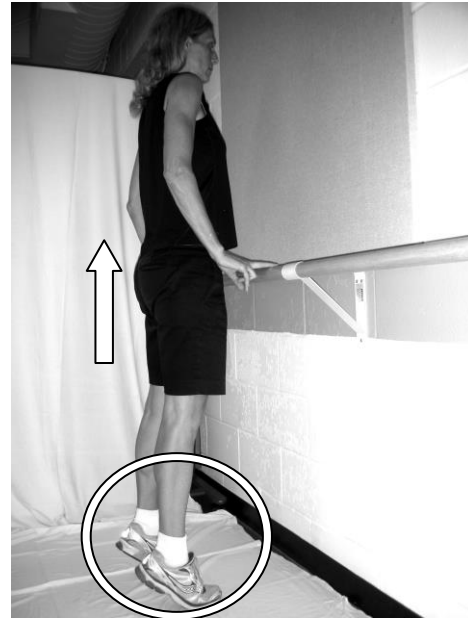
Benefit: Helps improve your balance and makes you stronger for walking.

Start and End Position



Stand with your feet shoulder width apart. Use the counter for support if you need it.

Middle Position



Slowly raise your heels as high as you can. Then slowly lower your heels and repeat.

Repeat up to 10 times; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 repetitions.

Tip: If your heel turns inwards, put a ball between your heels.

Lift your body up towards ceiling and not forward.

Try to make sure your weight is distributed evenly between your feet. Don't rely on the stronger side too much.

Progression:

1. Use less support by putting only two fingers on counter. Then try with no support.
2. Hold 3 to 10 lb. weights at your side with a 'palms-in' grip. Do the exercise by keeping weights at your side.
3. Or, put weights in a knapsack.
4. Lift heels as fast as possible (power up), and slowly lower heels down.

Heel Raises Options and Alternatives

If you are unable to lift the heel on the affected leg then try

Exercise 6B and/or 6C at the end of the document.

6B) One leg stand (page 20)

6C) Side to Side stepping (page 21)

If exercise 6 is too easy, try exercise 6D shown at the end of the document

6D) Heel Raise on the stair (harder) on page 22

7) Bridging Exercise

Benefit: Helps to build strength in the buttocks and the hamstrings (the muscles at the back of the legs behind the thighs)



Lie flat on back with knees bent, feet planted flat on the floor shoulder width apart.

Use no pillow behind your head or a very flat pillow if needed.



Tighten stomach muscles and buttock muscles and lift buttocks off the floor.

Create a straight line from your shoulders to your knees.

Repeat.

Repeat up to 10 times; stop when you feel you could do 2 to 3 more repetitions and no more. As you get stronger, gradually increase to 15 reps.

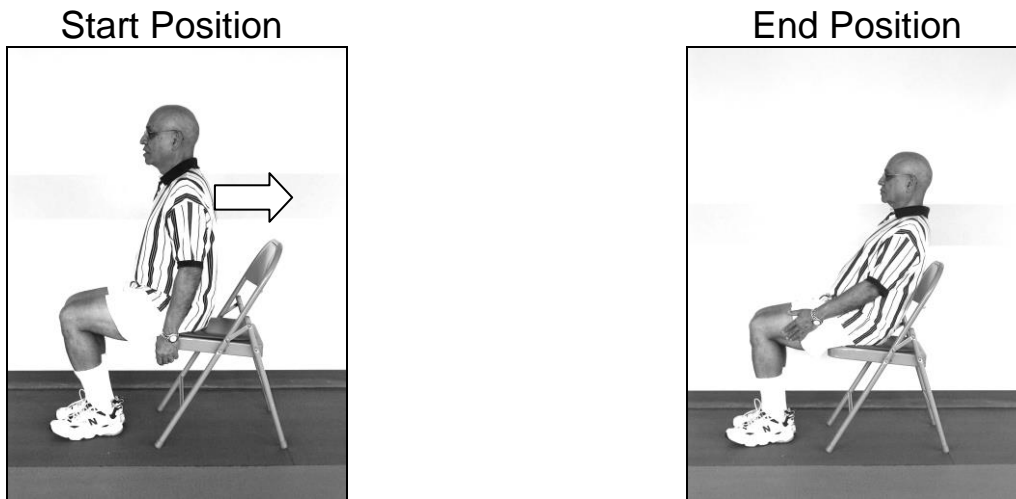
Progressions:

- 1) Put two or three pillows under your feet (7C) or your feet on a chair seat (7D). These exercises are found on pages 24 to 25 of this document.
- 2) Trying this exercise one leg at a time keeping the opposite leg straight and pointing to the ceiling (7E on page 26).

Alternative: If you are unable to perform this exercise, please see exercise number 7B (leg curl with towel) at the end of the document (page 23).

8) Seated Forward Curl

Benefit: Helps improve balance and strengthen your core muscles.



1. Sit in the middle or front of a chair.
2. Using your hands as little as possible (or not at all, if you can) lean back slowly so that you are almost touching the back of the chair. Keep your back straight, knees bent, and feet flat on the floor.
3. Slowly bring your trunk forward. Make sure you can feel your stomach muscles doing most of the work until you are sitting up straight.

Repeat up to 10 times on each leg; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 reps

| See progressions on the next page



Important Note: Please talk to your exercise supervisor if you have osteoporosis or risk of fracture of the bones in the spine (weakened or thinning of the bones). This exercise may not be appropriate for you.

Progression 1



Progression 2



- The further that you sit to the front of the chair the harder the exercise gets.
- When you can do the 'curl up' comfortably 15 times, then cross your arms over your chest.
- When you can do this exercise with arms crossed over chest 15 times comfortably, place your fingertips on your temples and extend your elbows out.
- If this is too easy**, ask a staff member to show you the curl-up while lying down (see exercise 8B on page 30).

Note: This is the last exercise of the workout.

For greater benefit, do the exercises again when you feel ready (2 or 3 sets).

The exercises shown on the following pages are ones that are harder or easier than the ones above. They will replace the exercise above.

Replacement Exercises For Numbers 1 to 8 Above

Alternative Exercises to the Static Lunge (Exercise #1)

(1B to 1D -Easier or Harder or Less Stress on the Joints)

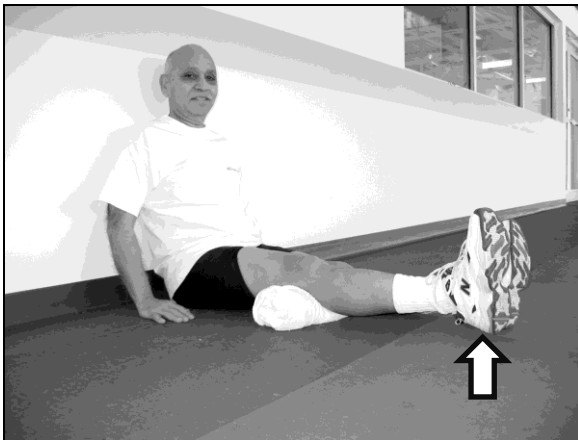
Alternatives to Exercise Number 1: The Static Squat

Exercises 1B and 1C are easier on the knees. 1C is a progression to 1B.

Exercise 1D: If the static squat is too easy, try exercise 1D called the dynamic squat

1B) Thigh Press – Easier on the knees than the Static Lunge

Benefit: Makes the muscles around the knee stronger to help stabilize the joint.



1. Roll up a bath towel. Sit on the floor or bed, and lean against a wall with your legs straight out in front of you.
2. Place the towel under one knee.
3. Squeeze your front thigh muscles tightly and press down on the towel.
4. Hold for 2 slow counts. Relax and repeat. Then switch legs.

Repeat up to 10 times on each leg; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 reps

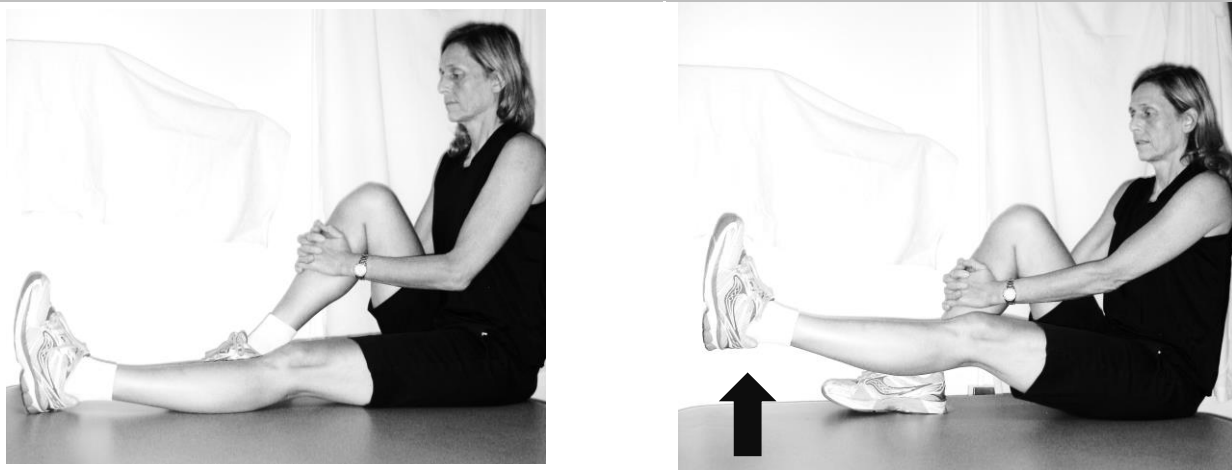
When you have progressed to 15 repetitions on each leg, then try exercise 1C (Leg Raise)

Alternative Exercises to the Static Lunge (Exercise #1)

(1B to 1D -Easier or Harder or Less Stress on the Joints)

1C) Leg Raise-Progression from Exercise 1B (Thigh press)

Benefit: Makes the muscles around the knee stronger to help stabilize the joint.



1. Sit on the floor or bed. Lean against a wall with one leg straight out in front of you and the other bent.
2. Wrap your arms around the bent leg for support.
3. Lift the straight leg off the floor, keeping the leg straight (but not locked). Try not to lean back.
4. Lower the leg, lightly touching the floor and repeat before switching sides.

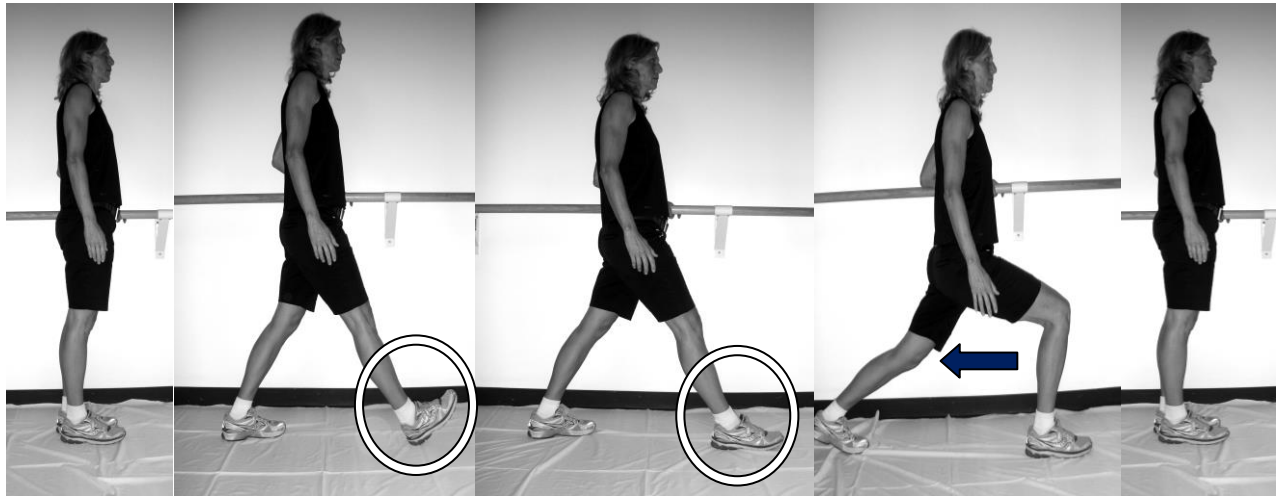
Repeat up to 10 times on each leg; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 reps

Alternative Exercises to the Static Lunge (Exercise #1)

1D. Lunge – More difficult than the Static Lunge

Benefit: This exercise will help you to build strength for walking and improving balance.



Starting Position	Heel Plant	Lower Toe	Lunge	End Position
One hand on counter	Plant heel with toe as high as possible	Slowly lower toe and then lower your hips	Keep upper body straight and shoulders back	Repeat with <u>other</u> leg

Repeat 10 times on each leg (20 in total) and slowly increase to 15 times.

Tips: Pick a point to look at in front of you so that you don't look at your feet. You can lower your hips until the front leg is bent at a 90-degree angle. Don't let your knee lunge past your toe. Lunge with one leg and then the other – both sides of the brain will be communicating

Progression:

- 1) Start with a short stride. As you get stronger and your balance improves, take a longer stride. Try not to look at your feet.
- 2) Gradually repeat the exercise a little faster to improve power. After foot plant/ lunge, return your foot to the starting position as fast as possible.
- 3) Try this exercise with as little help as possible. Try one finger tip on a counter. Or, put some weights in a knapsack to make it harder.

Alternative Exercises to the Heel Raises (Exercise #6)

Note: You may choose to continue with the heel raises to improve the strength of the non-affected leg and supplement with one or both of 6B and 6C.

6D is more difficult than the original heel raise.

6B) One Leg Stand

Benefit: Helps to get the muscles contracting around the ankle and improves balance.



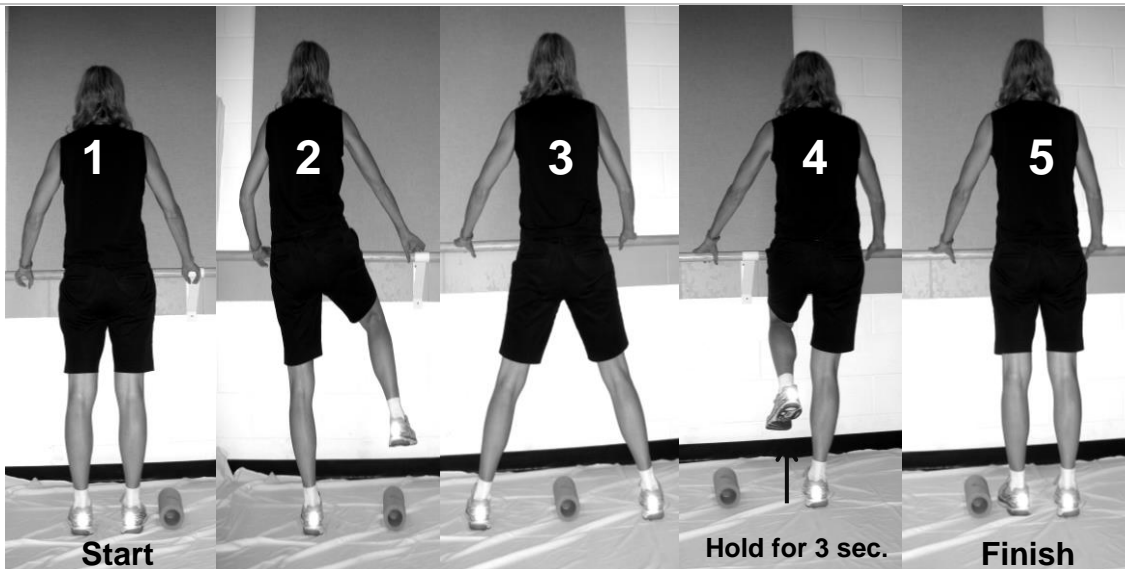
1. Using a counter or ledge for support, stand with both feet on the ground.
2. Slowly shift your weight onto the affected leg.
3. Slowly lift the non-affected leg off the ground and hold for 15 seconds.
4. Gradually increase the time spent on the affected foot to 45 seconds.

Repeat 10 times to start. As it gets easier gradually increase to 15 repetitions

Alternative Exercises to the Heel Raises (Exercise #6)

6C) Side to Side Stepping (ask someone to assist you if needed)

Benefit: Improves balance and movement around the ankle.



- 1) Using a counter for support, stand with both feet to one side of a rolled towel.
- 2) Lift the foot closest to the towel and put it on the ground on the other side of the towel. Place all your weight on this foot. Stay balanced on this foot for 3 seconds
- 3) Then place both feet on the ground.

Now do that same exercise but step over the towel in the opposite direction

Repeat 10 times to start. As it gets easier gradually increase to 15 repetitions

Alternative Exercises to the Heel Raises (Exercise #6)

6D) Double Heel Raise on Stairs – Harder than heel raise

Benefit: Helps to improve balance and builds strength for walking and stair climbing

Start and End Position



Middle Position



Stand with both feet on the bottom step using good posture.

Using the handrail for support, slowly raise your heels as high as you can.

Slowly lower your heels down below the level of the stair.

Repeat.

Repeat up to 10 times; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 reps

Tip: If your heel turns inwards, put a ball between your heels.

Lift your body up towards the ceiling and not forward.

Try to make sure the weight is even between your feet. Don't rely on the stronger side too much.

Progression: Slowly lower your heels down as low as possible, then POWER UP (lift your heels as fast as possible without losing balance). Repeat.

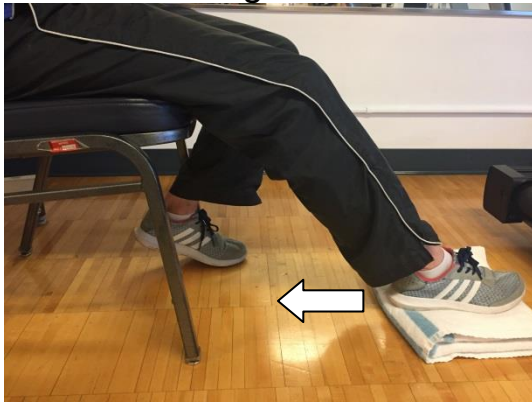
When ready, speak to your rehab supervisor to try this exercise one leg at a time.

Alternative Exercises to the Bridge (Exercise #7)

7B) Leg Curl with Towel

Benefit: Helps strengthen the hamstring muscles

Starting Position



While seated in a chair, place your foot as far in front of you as possible on a towel on the floor.

End Position



Pull the towel towards you to a count of 3 seconds.

Slowly return to starting position to a count of 2 seconds.

Repeat up to 10 times; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 reps

Progression for the Bridge Exercise #7

7C) Bridging Exercise Progression (on bed with pillows)

Benefit: Helps to build strength in the buttocks and the hamstrings (the muscles in the back of the legs behind the thighs)



Lay on your back with your palms down at your sides.

Bend your knees with feet on the pillows, shoulder width apart.



Tighten stomach and buttock muscles and lift buttocks off the floor.

Create a straight line from your shoulders to your knees.

Repeat.

Repeat up to 10 times; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 reps.

Tips: Use either no pillows behind your head or a flat pillow.

Progression: When ready, try this exercise one leg at a time (see Exercise 7E on page 26).

7D) Bridge with feet on a chair - harder



1. Place a sturdy chair with armrests against a wall
2. Lie on floor, palms down, with heels on the chair shoulder width apart and knees at a right angle
3. Tighten stomach and buttock muscles and lift hips off the floor
4. Slowly return to the starting position.

Repeat up to 10 times; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 reps.

7E) Bridge – single leg (Hardest)



1. Lay on your back (on the bed or floor) with your palms down at your sides.
2. Bend your knees with feet on the floor.
3. Lift one leg and fully extend it, forming a 45-degree angle with the floor.
4. Tighten stomach and buttock muscles and lift hips off the floor.
5. Slowly return to the starting position.

Repeat up to 10 times on each leg; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 reps.

Alternative or Additional Exercises to any of the Arm Exercises Including #2 (wall push up) and #4 (Chair Dip)

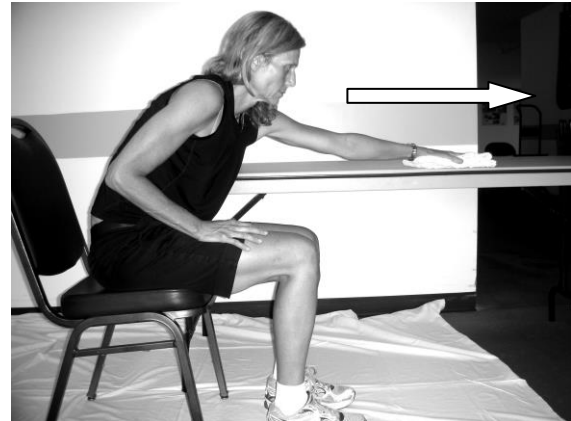
Table Slide

Benefit: Helps to improve shoulder movement

A. Forward: Start Position



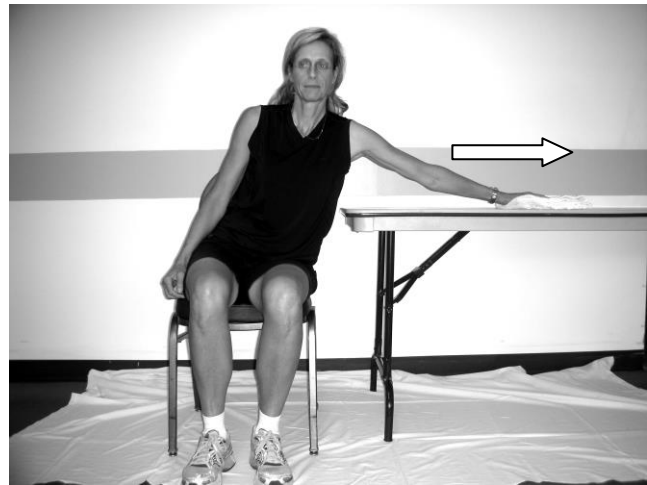
End Position



B. Side: Start Position



End Position



1. Sit close to a table. Put your affected hand palm down on a table top.
2. Slowly slide the hand forward (A) or to the side (B) until you feel a little stretching.
3. Stop and hold this position for 3 to 5 seconds.
4. Slowly return to the start position. Repeat.

Repeat Table Slide A 10 times and B 10 times

Tips: You can help support the **Affected** arm with your **Non-Affected** arm.

To make it easier, put a towel under your hand. To make it harder, put a ball under your hand or arm.

Alternative or Additional Exercises to any of the Arm Exercises Including #2 (wall push up) and #4 (Chair Dip)

Hand Lean

Benefit: Stimulates the muscles of the shoulder and upper arm.

Less hard: Stand closer to the table



1. Stand close to a table or counter for balance/ and support.
2. Put your affected hand palm down on the table.
3. Gently lean forward, putting some weight on the affected hand.
4. Lean back, relax, and repeat
5. Stop if you feel any pain or discomfort.

Harder: Stand further away



1. Stand close to a table or counter for balance and support.
2. Put your affected hand palm down the table.
3. Gently lean forward, putting some weight on the affected arm.
4. Lean back, relax, and repeat
5. Discontinue if you feel any pain or discomfort.

**Repeat 10 times and as it gets easier
increase to 15 repetitions**

Alternative or Progression of the Curl Up #8

8B Supine Curl-Up



1. Put one or both hands under your lower back to make sure you still have the natural arch in the lower back.
2. Bend one knee. Keep the other leg straight to protect the back.
3. Raise your head and upper shoulders off the floor. Slowly return to start position.

Repeat up to 10 times; stop when you feel you could do 2 to 3 more repetitions and no more.

As you get stronger, gradually increase to 15 reps.

Tip: Don't tuck your chin in or poke it out. Your neck shouldn't move.

If you feel dizzy, stop the exercise and speak to a staff member.

Progression: When you can repeat the 'curl up' comfortably 15 times, cross your arms over your chest. When you can do this 15 times comfortably, put your fingers to your temples with elbows extended out.

Warm Up Exercises TRI-REPS

Each warm up exercise should be done for 15 to 20 seconds. Exercise slowly and with control.



1. Shoulder blade squeeze



2. Hamstring stretch



3. Calf stretch



4. Side bend



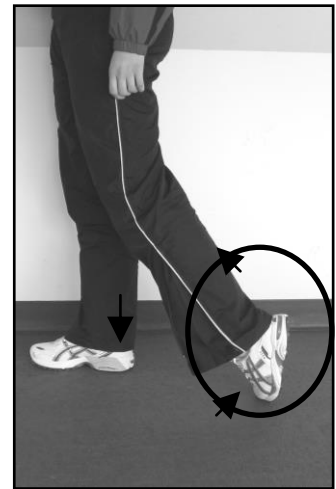
5. Shoulder roll



6. Bend wrist up



7. Bend wrist down



8. Ankle roll