

# *Active* HOMES

## *HOME STRENGTH-TRAINING GUIDE*

For people with Paraplegia





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## A] INTRODUCTION

This guide serves as a resource manual for individuals with a spinal cord injury who want to incorporate regular physical activity into their daily lives.

The Physical Activity Guidelines for Adults with SCI, released by SCI Action Canada in 2011, are the first evidence-based guidelines to be developed specifically to support people with SCI in living healthier, more active lives. They state that to improve fitness, healthy adults with SCI should participate in at least 20 minutes of moderate-to-vigorous aerobic activity at least two times per week, as well as strength training exercises at least two times per week.

These guidelines are appropriate for all healthy adults with chronic SCI, traumatic or non-traumatic, including tetraplegia and paraplegia, irrespective of gender, race, ethnicity or socio-economic status. Adults are encouraged to participate in a variety of physical activities that are enjoyable and safe.

**For important fitness benefits, adults with a spinal cord injury should engage in:**  
**At least 20 minutes of moderate to vigorous intensity aerobic activity 2 times per week,**  
**AND**  
**Strength training exercises 2 times per week, consisting of 3 sets of 8-10 repetitions of each exercise for each major muscle group.**

How...?	Aerobic Activity	Strength Training Activity
<b>How often?</b>	<b>Two times per week</b>	<b>Two times per week</b>
<b>How much?</b>	Gradually increase your activity so that you are doing at least 20 minutes of aerobic activity during each workout session.	Repetitions are the number of times you lift and lower a weight. Try to do 8-10 repetitions of each exercise. This counts as 1 set. Gradually work up to doing 3 sets of 8-10 repetitions of each exercise.
<b>How hard?</b>	These activities should be performed at a moderate to vigorous intensity. Moderate intensity: activities that feel somewhat hard, but you can keep doing them for a while without getting tired. Vigorous intensity: activities that make you feel like you are working really hard, almost at your maximum, and you cannot do these activities for very long without getting tired.	Pick a resistance (free weights, cable pulleys, bands, etc.) heavy enough that you can barely, but safely, finish 8-10 repetitions of the last set. Be sure to rest for 1-2 minutes between each set and exercise.
<b>How to?</b>	There are many ways to reach this goal, including: <i>Upper Body Exercises:</i> wheeling, arm cycling, sports <i>Lower Body Exercises:</i> Body weight supported treadmill walking, cycling <i>Whole Body Exercise:</i> recumbent stepper, water exercise	There are many ways to reach this goal, including: <ul style="list-style-type: none"> <li>■ Free weights</li> <li>■ Elastic resistance bands</li> <li>■ Cable pulleys</li> <li>■ Weight machines</li> <li>■ Functional electrical stimulation</li> </ul>

**Active Homes** is designed to help you achieve the strength-training recommendations included in these guidelines. Before getting started, please follow this checklist:

**Inform your doctor** - Let your family physician know about your plans for a home exercise program. He/she may have some precautions or recommendations for you to consider.

**Monitor yourself** - Exercising alone means being responsible for yourself. Use the “talk test” throughout your workout – can you talk without gasping for air? If not, it’s time to take a break and reduce the intensity of your workout. It is important to listen to your body. If you experience prolonged muscle and/or joint soreness, stop doing the activity that is causing the pain and consult your physician. Know that some initial discomfort is normal. If you feel signs or symptoms of autonomic dysreflexia, stop doing the activity immediately and determine the cause of the reaction.

#### **Signs and symptoms of autonomic dysreflexia:**

- Pounding headache (caused by the elevation in blood pressure)
- Goose pimples
- Sweating above the level of injury (sweating more than is expected from exercise)
- Cold, pale skin below level of injury
- Nasal congestion
- Blotching of the skin
- Restlessness
- Hypertension (blood pressure greater than 200/100)
- Slow pulse (less than 60 beats per minute)
- Flushed (reddened) face (not resulting from participating in physical activity)
- Red blotches on skin above the level of injury
- Nausea

#### **What to do if you think you are experiencing autonomic dysreflexia:**

- Initiate treatment quickly to prevent complications.
- Remain in a sitting position. You may transfer to your bed, but always keep your head elevated.
- Identify and remove the cause - A full bladder is the most common cause. Check the urinary drainage system - Bowel and skin might also be a cause.

*If the symptoms do not go away, consult a physician immediately*

**Pace yourself** – Start your program slowly and progress at an even rate during each workout and between workouts. Ease into your exercise program to avoid injuries and to minimize pain. If your breathing is uncomfortably fast, be sure to slow down until you start breathing normally again. Remember to use the “talk test” while working out – if you cannot talk without gasping for air, then it is time to take a break and reduce the intensity of your workout.

**If you’ve never exercised before, note the following:**

- First-time weightlifters may suffer from delayed onset muscle soreness following the first few weight training sessions. Delayed onset muscle soreness is the general muscle pain felt usually the day following an initial bout of exercise. For example, if you do arm curls today, tomorrow when you wake up, the muscles in the front of your arm will be sore. This soreness may be felt for up to 48 hours.
- Delayed onset muscle soreness usually resolves in a few days in mild cases, but in more severe cases, pain can persist for up to a week. Severe delayed onset muscle soreness may limit mobility.
- Sufferers of delayed onset muscle soreness often find relief from rest and/or low-intensity activities that warm up the muscles.
- Delayed onset muscle soreness is usually present after the first one or two weight training sessions, and only returns after a long period of inactivity.

**Dress the part** - Wear comfortable clothing.

**Check your environment** - Choose a spot in your home that is spacious and clear of obstacles.

**Warm-Up** - Remember to do light endurance work before your strength or flexibility exercises to ensure your muscles are warm.

**Cool-Down** - Complete some gentle stretching at the end of your routine and ensure that your breathing has returned to normal before you stop.

**KEEP HYDRATED!** - Be sure to drink lots of fluids while partaking in activities and after you are done.

## Tips for Success

### Using Exercise Bands.

- Before using the band, inspect it to ensure that there are no tears or small holes. Make sure that the band is wrapped firmly (but not too tight) around your hands. Adjust the length of the band so that there is just enough slack and exercise resistance so that you are able to go through the full range of motion while exercising.
- When using exercise bands to perform exercises, you are using the resistance of the band instead of weights. You can vary the resistance by adjusting your hand position on the band. To increase resistance (for example, when an exercise becomes easier), grasp the band closer to the center so to decrease the band's length. You can also try folding the band in half to increase the resistance. To decrease resistance, grasp it closer to the ends.
- Sometimes when you are working with exercise bands, they creep up and end up out of place. Each time you use an exercise band try to anchor it to something stable such as a doorknob or place it below the push handles on your wheelchair.
- Before beginning an exercise give the exercise band a few tugs to ensure the sturdiness of your anchor.

### Using this manual

The exercises listed in this manual are only guidelines. We recommended that you start with 3 sets of 8-10 repetitions; however, once you feel comfortable you can adapt and modify the sets and repetitions to suit your needs and goals (for more information, see the section on How Do I Reach My Goal). Balance is essential to any exercise regime, it is important to work the left and right sides of the body as well as the front and back to maintain muscle balance and prevent any injuries. It is also recommended to start with large muscle groups such as your chest and back muscles first, and end with the smaller muscle groups such as the muscles in your arms. Once you are comfortable with the first seven exercises, you can read more about the Additional Resistance Training Exercises and incorporate those into your plan. The exercises presented are in an order that promotes muscle balance and are separated into body areas.

As with any physical activity, please consult with your doctor before engaging in any of the exercises in this resource manual.

***Have Fun, But Be Safe!***



## B] WARM-UP

Before engaging in resistance training, it is important to warm-up to increase blood circulation and prepare the body for work. Here is a sample warm-up that can be done:

- Wheeling forwards and backwards for 2 minutes
- Shoulder rolls forwards 10 times on each shoulder (can do both shoulders at same time)
- Shoulder rolls backwards 10 times on each shoulder (can do both shoulders at same time)
- Arm circles forwards 10 times on each arm (can do both arms at same time to increase difficulty)
- Arm circles backwards 10 times on each arm (can do both arms at same time to increase difficulty)
- Wrist rolls to the right 10 times on each hand (can do both hands at the same time)
- Wrist rolls to the left 10 times on each hand (can do both hands at the same time)

**Shoulder rolls**



**Arm circles**



**Wrist rolls**



## C] RESISTANCE TRAINING EXERCISES

(Information adapted from NCPAD - <http://www.ncpad.org/exercise/>)

### Back Row

- Loop exercise band around a sturdy pole or other anchor. Give the exercise band a few tugs to ensure the sturdiness of your anchor.
- Position your chair a few feet away so that the exercise band is not too slack or too tight when reaching for it.
- Sit up straight in the chair with your feet flat on the floor or on your footplates and shoulder width apart. Contract your abdominals for trunk stability.
- Grab one end of the exercise band in each hand with palms facing down. Position the exercise band so that it is at an equal height with your shoulders. Keep your head, neck, and spine in a neutral position.
- Exhale and pull your hands towards your chest by bending at the elbows. Keep your back upright and straight as you bring your elbows behind you while squeezing your shoulder blades together. Inhale and return to starting position in a slow and controlled manner.
- Repeat this process 8-10 times for 3 sets.
- **Note:** You can also position the exercise band slightly higher than shoulder height (for a high-row) and slightly lower than shoulder height (for a low-row).

### Upper back muscles



### Start/End position



### Midpoint



**You already do this movement everyday when you:**

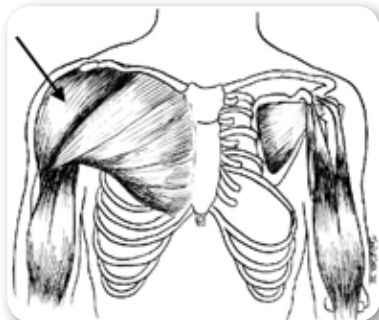
- Pull open doors
- Transfer
- Sit with good posture
- Get dressed

## Shoulder Press

**Note:** This is a more advanced exercise. Avoid any overhead movements if you have shoulder pain, or any history of weakness or injury in your shoulder area.

- Sit up straight with your feet flat on the floor or on the footplates and shoulder width apart. Contract your abdominals for trunk stability. Keep your head, neck, and spine in a neutral alignment.
- Bend your elbows and raise your arms to a 90-degree position. Grasp the weights so your palms are facing forward and your hands slightly wider than your shoulders. (As an alternative, an exercise band may be used by securing it underneath your chair. Hold one end of the exercise band in each hand and raise your arms to a 90-degree angle with your palms facing forward.)
- Exhale as you slowly straighten your elbows and raise the weights above you. Be careful to straighten your arms without locking your elbows. Inhale as you slowly lower the weights back down to starting position.
- Repeat this process 8-10 times for 3 sets.

## Shoulder (Deltoid muscle)



### Start/End position



### Midpoint



### You already do this movement everyday when you:

- Reach for items overhead
- Get dressed
- Sit with good posture
- Do personal care

# Active

## Lat Pulldown

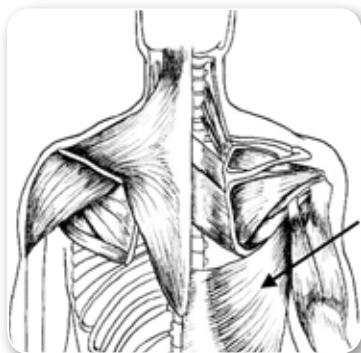
- Attach exercise band to a sturdy structure directly above you (i.e. loop it over a sturdy pole or on the edge of a door) so that you can pull the exercise band down.
- Sit up straight in the chair with your feet flat on the floor or on your footplates and shoulder width apart. Contract your abdominals for trunk stability. Keep your head, neck, and spine in a neutral position.
- Grasp each end of the exercise band in each hand.
- Exhale and pull the exercise band down while bending your elbows and bringing your hands to the sides of your waist. Inhale as you bring the exercise band back to the starting position in a controlled manner.
- Repeat this process 8-10 times for 3 sets.

## Middle back and side

(Latissimus dorsi muscle)

Start/End position

Midpoint



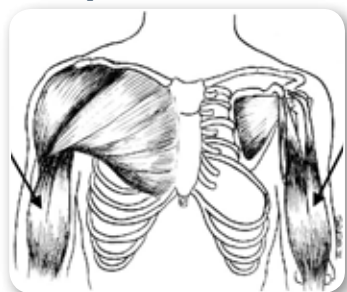
**You already do this movement everyday when you:**

- Transfer
- Wheel in a manual chair
- Get dressed
- Do personal care

## Bicep Curl

- Sit up straight in the chair with your feet flat on the floor or on your footplates and shoulder width apart. Contract your abdominals for trunk stability. Keep your head, neck, and spine in a neutral position.
- Begin by placing the exercise band underneath the chair. (As an alternate, a weight in each hand can also be used.)
- Grasp the ends of the exercise band with each hand, palms facing up, and let your arms extend straight down by your sides.
- Exhale as you bend your elbows and bring the exercise band towards your shoulders, taking care to keep the elbows tucked into your side. Inhale as you slowly lower the band back to your side, but don't straighten your arm completely. Keep the tension on the muscle throughout the movement.
- Repeat this process 8-10 times for 3 sets.

### Front of upper arm (Bicep muscle)



### Start/End position



### Midpoint



### Or try with a weight:



### You already do this movement everyday when you:

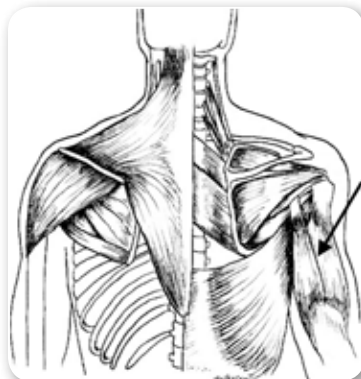
- Do housework
- Get dressed
- Do personal care
- Lift things off the ground

## Tricep Kickbacks

**Note:** This exercise may be difficult if you have limited use of your triceps and/or abdominal muscles.

- Begin by sitting up straight in the chair, keeping your abdominals contracted for trunk stability. Keep your head up and your feet firmly on the floor or on your footplates, shoulder width apart.
- Hold a weight in each hand with palms facing in. Raise your elbows behind you roughly to your shoulder height.
- Keeping your elbows close to the side of your body, exhale as you straighten your arm by pushing the weight back and behind you. Do not “lock” your elbow, maintain a slight bend to prevent injury
- Hold for a second and inhale as you slowly bring the weight back to starting position.
- Repeat this process 8-10 times for 3 sets.

## Back of upper arm (Tricep muscle)



### Start/End position



### Midpoint



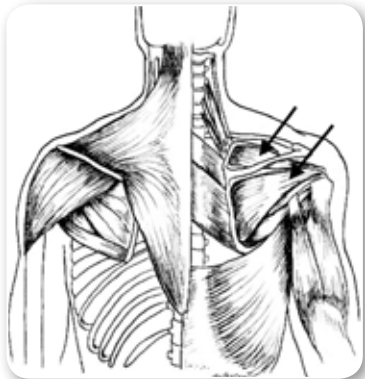
### You already do this movement everyday when you:

- Transfer
- Wheel in a manual chair
- Get dressed
- Do personal care

## External Rotation

- Position your chair about 1 foot perpendicular to a sturdy pole or other anchor so that when you sit, the side you want to work is facing away from the pole.
- For example, when working your left rotator cuff muscles, you want your right side to face the anchor while you hold the exercise band in the left hand. Vice versa for your right rotator cuff muscles.
- Loop the exercise band around the pole at waist height and give it few tugs to insure its sturdiness. Hold the exercise band so that it is not too slack or too tight when holding it in the starting position.
- Begin by holding the exercise band so that your thumb is facing the ceiling with your elbows at your side bent to a 90-degree angle.
- Exhale as you slowly bring the exercise band outwards, away from your body, while keeping your elbow at your side. Inhale as you bring the exercise band back to the starting position in a controlled manner.
- Repeat this process 8-10 times for 3 sets.
- As another option, you can do this exercise with a small weight held in your palm.

### Rotator cuff muscles



### Start/End position



### Midpoint



### You already do this movement everyday when you:

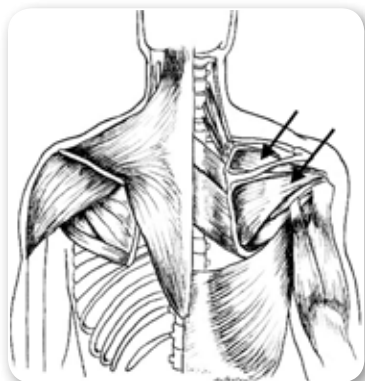
- Transfer
- Do personal care

# Active

## Internal Rotation

- Position your chair about 1-2 feet perpendicular to a sturdy pole or other anchor on the side that you want to work.
- For example, when working your left rotator cuff muscles, you want your left side to face your anchor. Vice versa for your right rotator cuff muscles.
- Loop the exercise band around the pole at waist height and give it few tugs to insure its sturdiness. Hold the exercise band so that it is not too slack or too tight when holding it in the starting position.
- Hold the exercise band so that your thumb is facing the ceiling with your elbows at your side bent to a 90-degree angle.
- Exhale as you slowly bring the exercise band in towards your torso, while keeping your elbow at your side. Inhale as you bring the exercise band back to the starting position in a controlled manner.
- Repeat this process 8-10 times for 3 sets.
- As another option, you may do this exercise with a small weight held in your hand.

### Rotator cuff muscles



### Start/End position



### Midpoint



### You already do this movement everyday when you:

- Transfer
- Do personal care

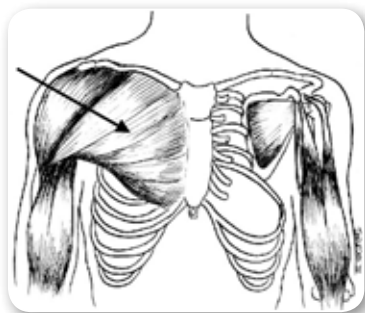


## ADDITIONAL RESISTANCE TRAINING EXERCISES

### Chest Press

- Bring the exercise band around the back of your shoulders and secure it under your shoulder blades or around the back of your chair and under your handlebars. Grab one end of the exercise band in each hand.
- Sit up straight in the chair with your feet flat on the floor or on your footplates and shoulder width apart. Contract your abdominals for trunk stability. Keep your head, neck, and spine in a neutral position
- Bend your elbows and bring your hands up to shoulder level, with palms facing away from you.
- Exhale as you push the exercise band straight out in front of you, taking care not to lock your elbows at the end of the motion. Inhale and bring the exercise band back to starting position.
- Repeat this process 8-10 times for 3 sets.

### Chest (Pectoralis muscle)



### Start/End position



### Midpoint



### You already do this movement everyday when you:

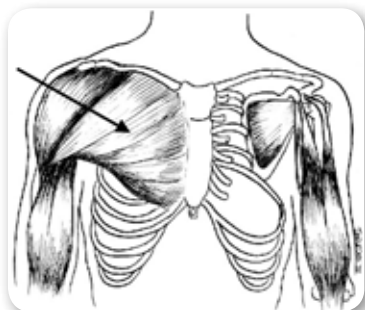
- Push open doors
- Transfer
- Wheel in a manual chair
- Get dressed

## Chest Fly

- Bring the exercise band around back of your shoulders and secure it under your shoulder blades or around the back of your chair and under your handlebars. Grab one end of the exercise band in each hand.
- Sit up straight in the chair with your feet flat on the floor or on your footplates and shoulder width apart. Contract your abdominals for trunk stability. Keep your head, neck, and spine in a neutral position.
- Bring your arms out to the sides and up to the level of your shoulders, with palms facing in. Bend your elbows slightly and maintain this natural curve throughout the motion of the exercise.
- Exhale and bring your palms together until they are almost straight in front of you. Inhale as you return them to starting position.
- Repeat this process 8-10 times for 3 sets.

## Chest

### Pectoralis muscle



### Start/End position



### Midpoint



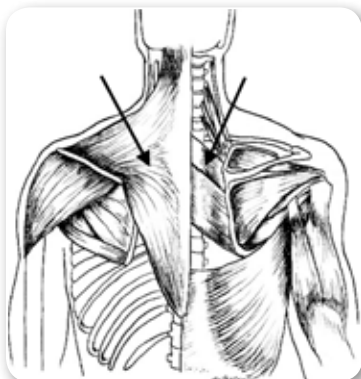
### You already do this movement everyday when you:

- Push open doors
- Transfer
- Wheel in a manual chair
- Get dressed
- Do housework

## Reverse Fly

- Loop the exercise band around a very sturdy pole or other anchor. Give the exercise band a few tugs to ensure the sturdiness of your anchor.
- Position your chair a few feet away so that the exercise band is not too slack or too tight when in the starting position. Keep your head, neck, and spine in a neutral alignment.
- Grab one end of the exercise band in each hand with palms facing each other. Sit up straight in the chair with your feet flat on the floor or on your footplates and shoulder width apart. Contract your abdominals for trunk stability. Position the exercise band so that it is at an equal height with your shoulders.
- Exhale and pull the exercise band out towards your side in an arching motion, without bending your elbows. When your elbows are in line with your shoulders, inhale and return the exercise band to starting position.
- Repeat this process 8-10 times for 3 sets.

### Upper back muscles



### Start/End position



### Midpoint



### You already do this movement everyday when you:

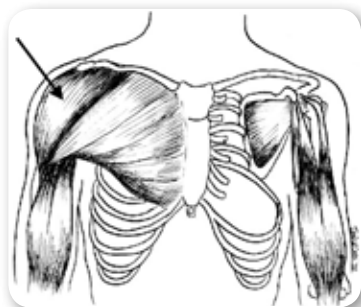
- Pull open doors
- Transfer
- Sit with good posture
- Get dressed
- Do housework
- Do personal care

# Active

## Lateral Shoulder Raise

- Put the exercise band underneath your chair and grasp one end of the exercise band in each hand. Alternatively, you can also try this exercise with a weight in each hand.
- Sit up straight in the chair with your feet flat on the floor or footplates and shoulder width apart. Contract your abdominals for trunk stability. Keep your head, neck, and spine in a neutral position.
- Hold the exercise band down at your side with your palms facing in towards your body.
- Exhale and slowly raise both arms straight out to your side until they are at shoulder height. Inhale as you bring them back down to starting position, lowering them in a slow and controlled manner.
- Repeat this process 8-10 times for 3 sets.

## Shoulder (Deltoid muscle)



### Start/End position



### Midpoint



Or try with a weight:



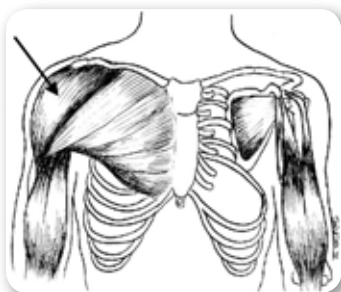
**You already do this movement everyday when you:**

- Do housework
- Transfer
- Lift things off the ground
- Get dressed

## Front Shoulder Raise

- Sit up straight in the chair with your feet flat on the floor or on your footplates and shoulder width apart. Contract your abdominals for trunk stability. Keep your head, neck, and spine in a neutral alignment.
- Hold the weights at your side with your palms facing behind you. (As an alternative, an exercise band may be used by securing it underneath your chair. Hold one end of the exercise band in each hand with your palms facing behind you.)
- Exhale as you slowly raise the weights straight out in front of you until they reach shoulder height. When bringing them back down to the starting position, inhale as you lower them in a slow and controlled manner (do not let the weights drop back down).
- Repeat this process 8-10 times for 3 sets.
- The front raise exercise can be done with both arms simultaneously or by alternating the arms.

## Shoulder (Deltoid muscle)



### Start/End position



### Midpoint



Or try with a weight:



**You already do this movement everyday when you:**

- Transfer
- Wheel in a manual chair
- Get dressed
- Lift things off the ground

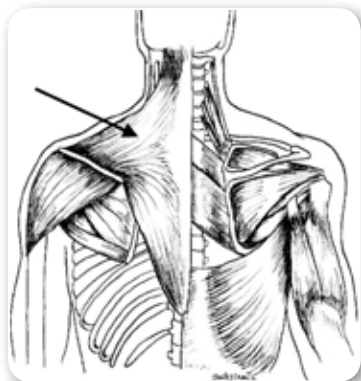
## Shoulder Shrug

**Note:** This exercise is especially important if you use an electric chair, a manual assisted chair, or if you do not spend a lot of time wheeling, as you are not targeting these muscles everyday. If you do a lot of wheeling in a manual chair, then you do not have to perform this exercise as your upper back and neck muscles are sufficiently worked when you wheel.

- Sit up straight in the chair with your feet flat on the floor or on your footplates and shoulder width apart. Contract your abdominals for trunk stability.
- Hold the weights down at the side of your chair with an overhand grasp so your palms are facing behind you. (This can also be done without using weights.)
- Exhale and slowly raise your shoulders up without bending at your elbow, as if you were shrugging your shoulders. Your hands should continue to be perpendicular to the floor throughout the movement of the exercise. Inhale as you slowly lower your shoulders in a controlled manner.
- Repeat this process 8-10 times for 3 sets.

## Upper back and neck

(Upper trapezius muscle)



Start/End position



Midpoint



**You already do this movement everyday when you:**

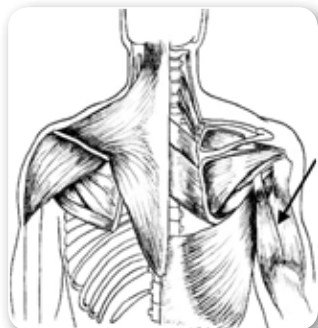
- Transfer
- Wheel in a manual chair
- Get dressed

## Overhead Tricep Extensions

**Note:** This is a more advanced exercise than the triceps kickbacks. You should avoid any overhead movements if you have shoulder pain or any history of weakness or injury in your shoulder area.

- Sit up straight in the chair with your feet flat on the floor or on your footplate and shoulder width apart. Contract your abdominals for trunk stability. Keep your head, neck, and spine in a neutral position.
- Holding the weight in one hand, extend that arm overhead while using your other hand to hold the chair for balance. (As an alternative, an exercise band can also be used. Be sure to secure the exercise band underneath the handlebars of your chair.)
- Inhale as you slowly lower the weight straight down behind your head, keeping your elbow in one fixed point. Be sure to lower the weight in a slow, controlled manner and do not let the weight drop behind your head. Exhale as you raise the dumbbell back up to the starting position. Do not lock your elbows when you bring the weight back up to the starting position.
- Repeat this process 8-10 times for 3 sets.

## Back of upper arm (Tricep muscle)



**Start/End position**



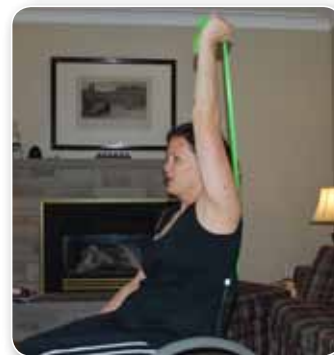
**Midpoint**



**Or try with an exercise band:**

**You already do this movement everyday when you:**

- Transfer
- Wheel in a manual chair
- Get dressed
- Do personal care



# Active

## Trunk Twists

**Note:** This exercise should only be done if you have control of your abdominal muscles.

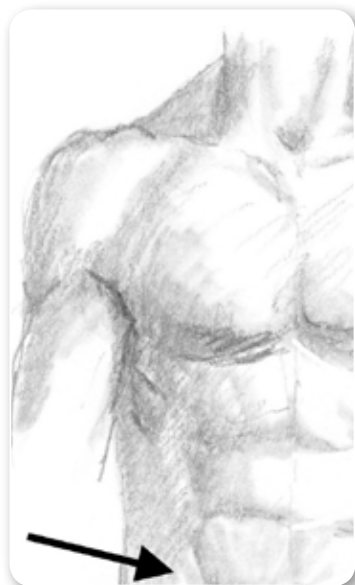
- Sit up straight in chair with feet flat on floor or on your footplates and shoulder width apart.
- Contract abdominals for trunk stability.
- With the weight at chest level, exhale as you twist from the trunk to one side keeping your arms in line with your chest. Inhale as you slowly move the weight back to its starting position.
- Exhale again as you twist to the opposite side, keeping the weight at chest level. Inhale as you slowly move the weight back to its starting position.
- Repeat this process 8-10 times for 3 sets.

## Side of trunk

(Oblique abdominal muscles)

Start/End position

Midpoint on left side



**You already do this movement everyday when you:**

- Sit with good posture
- Transfer
- Bend over
- Reach for things



## D] STRETCHING EXERCISES – Cool Down

### Lateral Neck Flexion

- Sit up straight in your chair with your feet flat on floor or on your footplates and shoulder width apart.
- Contract abdominals for trunk stability.
- Bring your right ear to your right shoulder, go to the point of tension and not pain.
- Hold for 15-30 seconds, breathing in through your nose and out through your mouth, then switch sides.



### Upper Back Stretch

- Sit up straight in your chair with your feet flat on floor or on your footplates and shoulder width apart.
- Contract abdominals for trunk stability.
- Bring your right arm straight across your body, then scoop under the elbow with the other hand and pull towards you, go to the point of tension and not pain.
- Hold for 15-30 seconds, breathing in through your nose and out through your mouth, then switch sides.



### Seated Twist Stretch

- Sit up straight in your chair with your feet flat on floor or on your footplates and shoulder width apart.
- Contract abdominals for trunk stability.
- Rotate your body to one side as far you can, go slowly and only go to the point of tension and not pain.
- Hold for 15-30 seconds, breathing in through your nose and out through your mouth, then switch sides.
- Use your hands for balance and to increase your range of motion on the twist.



## ADDITIONAL STRETCHING EXERCISES

### Neck Flexion

**Note:** Avoid this stretch if you have hardware in your neck.

- Sit up straight in your chair with your feet flat on floor or on your footplates and shoulder width apart.
- Contract abdominals for trunk stability.
- Bring your chin down to your chest, go to the point of tension and not pain.
- Hold for 15-30 seconds, breathing in through your nose and out through your mouth.



### Neck Rotation

- Sit up straight in your chair with your feet flat on floor or on your footplates and shoulder width apart.
- Contract abdominals for trunk stability.
- Rotate your neck to the right side of your body, go to the point of tension and not pain.
- Hold for 15-30 seconds, breathing in through your nose and out through your mouth, then switch sides.



### Chest Stretch

- Sit up straight in your chair with your feet flat on floor or on your footplates and shoulder width apart.
- Contract abdominals for trunk stability.
- Extend your arms straight out to the side, go to the point of tension and not pain (can do both arms at the same time or one arm at a time).
- Hold for 15-30 seconds, breathing in through your nose and out through your mouth.



## Lower Back Stretch

**Note:** This stretch is not advised for individuals with a T12 or higher injury as trunk control and strength are absolutely necessary for safety during this stretch.

- Sit up straight in your chair with your feet flat on floor or on your footplates and shoulder width apart.
- Contract abdominals for trunk stability.
- Bring your arms straight down in front of your body as if trying to touch toes, go slowly and only go to the point of tension and not pain.
- Hold for 15-30 seconds, breathing in through your nose and out through your mouth, then switch sides.
- Come up slowly to avoid any dizziness, if you feel light headed or dizzy, avoid this exercise.



## Forearm (Extensor) Stretch

- Sit up straight in your chair with your feet flat on floor or on your footplates and shoulder width apart.
- Contract abdominals for trunk stability.
- Bring your arm straight out in front of your body, point your fingers downward and pull the fingers gently towards your body with the other hand, go to the point of tension and not pain.
- Hold for 15-30 seconds, breathing in through your nose and out through your mouth, then switch sides.



## Forearm (Flexor) Stretch

**Note:** This stretch should not be done if you have limited to no grip strength.

- Sit up straight in your chair with your feet flat on floor or on your footplates and shoulder width apart.
- Contract abdominals for trunk stability.
- Bring your arm straight out in front of your body, point your fingers upward and pull the fingers gently towards your body with the other hand, go to the point of tension and not pain.
- Hold for 15-30 seconds, breathing in through your nose and out through your mouth, then switch sides.



## E] HOW DO I REACH MY GOAL?

### How do I increase the difficulty of my Home Exercise Program?

We have recommended that you start with 3 sets of 8-10 repetitions. When you begin to feel that your exercise program only requires “mild effort” to complete, you should increase the difficulty of your program. There are two ways to do so:

- Increase the number of repetitions
  - If you started your program with 3 sets of 8 repetitions, work up to 3 sets of 10 repetitions. This will help increase your muscle endurance.
  - If you started your program with 3 sets of 10 repetitions, then increase the weight/resistance you are using.
- Increase the weight/resistance
  - If you are performing an exercise that uses an object (i.e. soup can, water bottle filled with pebbles) other than an exercise band, try to find a different object that is 1-2 pounds heavier. Try to perform 3 sets of 8 repetitions with the new weight. If you feel like you are working with moderate to heavy effort, then you have chosen a good weight. If not, try to find an object that is even heavier.
  - If you are performing exercises that use an exercise band, you are going to need to increase the resistance of the band when performing your exercises. An easy way to do this is to grasp the exercise band closer to its attachment point. For example, if performing lat pull downs, reach higher on the exercise band so that there is less distance between the overhead attachment point and your hands.
    - \* If you want, you can use a ballpoint pen to make marks on your exercise band to remember where you should be grasping the exercise band for each exercise. Be sure to mark the attachment point (i.e. the point that gets looped around your pole/banister) and the points at which you hold the band. You can use this marker system as a way to measure your progress as you continue to increase the resistance of the exercises.
- Once you have increased the weight/resistance, work up from 3 sets of 8 repetitions to 3 sets of 10 repetitions.

### What should I do?

Some information is included below. You can also consult the Physical Activity Guidelines for Adults with Spinal Cord Injury included in the Introduction of this manual.

#### Endurance Activities

(at least 20 minutes twice per week)

- Get your heart pumping and blood flowing
- Wheeling in a manual chair, performing chores/housework and doing recreational sports
- Included in the Warm-Up section of this manual

#### Strength Activities

(at least twice per week)

- Work your muscles against some kind of resistance
- Exercises range from lifting weights, using exercise bands, heavy chores
- Focus on the first seven exercises in this manual

## INTENSITY CLASSIFICATION CHART

### How hard are you working?

#### NOTHING AT ALL

Includes activities that even when you are doing them, you do not feel like you are working at all.

#### MILD

Includes physical activities that require you to do very light work. You should feel like you are working a little bit but overall you shouldn't find yourself working too hard.

#### MODERATE

Includes physical activities that require some physical effort. You should feel like you are working somewhat hard but you should feel like you can keep going for a long time.

#### HEAVY

Includes physical activities that require a lot of physical effort. You should feel like you are working really hard (almost at your maximum) and can only do the activity for a short time before getting tired. These activities can be exhausting.

### How does your body feel?

	NOTHING AT ALL	MILD	MODERATE	HEAVY
Breathing & Heart rate	Everything is normal	Stays normal or is only a little bit harder and/or faster than normal.	Noticeably harder and faster than normal but NOT extremely hard or fast.	Fairly hard and much faster than normal.
Muscles	Everything is normal	Feel loose, warmed-up and relaxed. Feel normal temperature or a little bit warmer and not tired at all.	Feel pumped and worked. Feel warmer than normal and starting to get tired after awhile.	Burn and feel tight and tense. Feel a lot warmer than normal and feel tired.
Skin	Everything is normal	Normal temperature or is only a little bit warmer and not sweaty.	A little bit warmer than normal and might be a little sweaty.	Much warmer than normal and might be sweaty.
Mind	Everything is normal	You might feel very alert. Has no effect on concentration.	Require some concentration to complete.	Requires a lot of concentration (almost full) to complete.

Martin Ginis, K. A. & Latimer, A. E. (2008) PARA-SCI: The Physical Activity Recall Assessment for People with Spinal Cord Injury. Available from <http://www.flintbox.com/public/project/1902/>

## How should I plan my exercise sessions?

- Include as much detail as possible in your weekly exercise plan. The more detail you include, the more likely you are to follow your plan. Be sure to write down the activity, where you will do the activity, what day you will do it and at what time.
- For important fitness benefits, schedule at least two strength training sessions per week, consisting of 3 sets of 8-10 repetitions of each exercise for each major muscle group.
- **Avoid doing your strength training program 3 days in a row.**
- If you need, break up your fitness routine throughout the day (i.e. 15 minutes in the morning, 15 minutes in the evening) .
- Post the calendar somewhere you will see it (i.e. on the fridge or bulletin board).
- Create some sort of reward system for weeks that you complete your exercise plan (i.e. go to see a movie in the theatre or buy that item that you have had your eye on).

## WEEKLY EXERCISE PLAN WORKSHEET

Now use the following calendar to plan out your Weekly Exercise Plan.

### Week 1

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
WHEN	WHEN	WHEN	WHEN	WHEN	WHEN	WHEN
WHERE	WHERE	WHERE	WHERE	WHERE	WHERE	WHERE
WHAT	WHAT	WHAT	WHAT	WHAT	WHAT	WHAT
EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT	EQUIPMENT

Total number of times Home Exercise Plan completed: \_\_\_\_\_

Total minutes of strength activities completed: \_\_\_\_\_

Notes: \_\_\_\_\_

## F] HELPFUL RESOURCES

Groups who encourage physical activity among people with SCI:

**SCI Action Canada** ([www.sciactioncanada.ca](http://www.sciactioncanada.ca), 905-525-9140 ext 21374)

An ongoing, collaborative endeavour bringing together university-based researchers, knowledge mobilization specialists, support networks, service groups and community members focused on advancing physical activity, knowledge and participation among Canadians living with spinal cord injury. Check the website often as there are ongoing updates to the physical activity resources.

**Get in Motion** is a free physical activity counseling service associated with SCI Action Canada for Canadians with spinal cord injury. This Canada-wide service is supported by the SCI Translational Research Network in partnership with the Rick Hansen Institute. Get in Motion is designed to provide you with the information and support you may need to answer questions and meet personal physical activity goals. You will receive a free physical activity toolkit that includes two exercise bands and information on physical activity for people with SCI. You will also be invited to participate in a research study on the effectiveness of the service.

Whether you are considering becoming physically active, have just begun a physical activity program, or have been engaging in physical activity for a while, you can benefit from this service, as physical activity counseling sessions are created to meet your specific needs.

To participate or receive more information, please call the voicemail line at 1-866-678-1966 or visit our website at [www.sciactioncanada.ca](http://www.sciactioncanada.ca)

**Canadian Paraplegic Association (CPA)** ([www.canparaplegic.org](http://www.canparaplegic.org))

Mission is to assist persons with spinal cord injuries and other physical disabilities to achieve independence, self reliance and full community participation.

**Spinal Cord Connections** (<http://www.spinalcordconnections.ca/>)

An online Canadian source of the most current and reliable information about spinal cord injury and disease. This website is also your online connection to people in the spinal cord community. It is a new and innovative e-resource centre for people with SCI, their families, and community-based health and service providers.

**Canadian Paralympic Committee (CPC)** ([www.paralympic.ca](http://www.paralympic.ca), 613-569-4333)

A non-profit, private organization with 43 member sports organizations. Check out their “Get Involved Portal” which provides a listing of all opportunities for individuals to become involved in Para-sport across Canada.

## **National Center for Physical Activity and Disability (NCPAD)**

([www.ncpad.org](http://www.ncpad.org), 1-800-900-8086 voice and TTY)

An information center concerned with physical activity and disability. Being physically active is good for every body. Their goal is to provide you with options and information to help you pursue whatever kind of activity you think you would enjoy. The important thing is not what you do, but that you do something. Indoor or outdoor, recreational or competitive, solo or team, easy or intensive, NCPAD has the resources, contacts, and assistance you need. \*\*Check out their exercise videos\*\*

## **Active Living Alliance for Canadians with a Disability** ([www.ala.ca](http://www.ala.ca), 1-800-771-0663)

Goal is to promote inclusion and active living lifestyles of persons in Canada with disabilities by facilitating communication and collaboration among organizations, agencies and individuals.

## **Canadian Wheelchair Sports Association (CWSA)** ([www.cwsa.ca/en/site](http://www.cwsa.ca/en/site))

Mission is to promote excellence and develop opportunities for Canadians in wheelchair sport. In addition to its role as a developer of elite athletes, CWSA is a national and international voice for Canadian wheelchair athletes. CWSA also provides a national link for the development of wheelchair athletes and sports, at all levels and in all areas of the country.

## **Map My Ride** ([www.mapmyride.com](http://www.mapmyride.com))

A website that allows users to map a specific route or course. Distance is calculated between start and finish points. A great tool to help keep track of distances wheeled over time. You can register for a free account to keep track of your progress.

## **Adaptavie** ([www.adaptavie.org](http://www.adaptavie.org))

Adaptavie Inc. est un organisme sans but lucratif qui offre une programmation d'activités physiques et sportives adaptées à l'intention des personnes présentant une déficience physique ou intellectuelle.