Physiotherapy Database
Exercises for people with Spinal Cord Injury

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

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Fitness - pushing up a ramp backwards.

Physiotherapist Aim:
To strengthen the shoulders and improve fitness.

Client Aim:
To improve your shoulder strength and fitness.

Physiotherapist Instructions:
Position the patient in their wheelchair at the bottom of a ramp. Instruct the patient to ascend the ramp backwards.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair at the bottom of a ramp. Practice ascending the ramp backwards.

Progression and Variations:
Less advanced:
1. Practice on gentle slopes.

More advanced:
1. Practice on steeper slopes.
2. Practice the task in different environments.

Fitness - pushing up a ramp forwards.

Physiotherapist Aim:
To strengthen the shoulders and improve fitness.

Client Aim:
To improve your shoulder strength and fitness.

Physiotherapist Instructions:
Position the patient in their wheelchair at the bottom of a ramp. Instruct the patient to ascend the ramp.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair at the bottom of a ramp. Practice ascending the ramp.

Progression and Variations:
Less advanced:
1. Practice on gentle slopes.

More advanced:
1. Practice on steeper slopes.
2. Practice the task in different environments.

Precautions:
1. Ensure that wheelchair does not flip backwards.

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Fitness - upper and/or lower limbs - passive/active cycle.

Physiotherapist Aim:
To improve fitness, strength and range.

Client Aim:
To improve your fitness, strength and range.

Physiotherapist Instructions:
Position the patient in their wheelchair with their hands and/or feet in the paddles of the active/passive cycle. The machine can be used to either actively or passively rotate the arms and legs.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your hands and/or feet in the paddles of the active/passive cycle. The machine can be used to either actively or passively rotate your arms and legs.

Progression and Variations:

Less advanced:
1. Decrease the active resistance.

More advanced:
1. Increase the active resistance.

Precautions:
1. Check for pressure marks in areas where sensation is absent or impaired.

Fitness - upper limbs - active cycle.

Physiotherapist Aim:
To improve fitness.

Client Aim:
To improve your fitness.

Physiotherapist Instructions:
Position the patient in their wheelchair with their hands in the paddles of the active cycle.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your hands in the paddles of the active cycle.

Progression and Variations:

Less advanced:
1. Decrease the active resistance.

More advanced:
1. Increase the active resistance.

Precautions:
1. Check for pressure marks in areas where sensation is absent or impaired.

Injury Type
- C4 Quadriplegia
- C5 Quadriplegia
- C6 Quadriplegia
- C7 Quadriplegia
- Incomplete
- Paraplegic

Difficulty Level
- Advanced
- Beginner
- Intermediate

Equipment Required
- Active/passive cycle

Exercise Type
- Fitness
- Strength
- Stretch

Body Part
- Foot
- Lower arm
- Upper arm
- Upper leg

Exercise Submitted
- Sydney Spinal Units
Skill practice - balance - ball - seated.

Physiotherapist Aim:
To improve the ability to sit unsupported.

Client Aim:
To improve your ability to sit unsupported.

Physiotherapist Instructions:
Position the patient sitting on a large ball. Ensure the ball is wedged between two plinths. Instruct the patient to practice lifting their hands up in the air without falling.

Client Instructions:
Position yourself (or have someone position you) sitting on a large ball. Ensure the ball is wedged between two plinths. Practice lifting your hands up in the air without falling.

Progression and Variations:
Less advanced:
1. Practice the task on a plinth.

More advanced:
1. Change the size of the ball.
2. Practice carrying out a task while sitting on the ball.

Skill practice - balance - boxing - seated.

Physiotherapist Aim:
To improve the ability to sit unsupported.

Client Aim:
To improve your ability to sit unsupported.

Physiotherapist Instructions:
Position the patient in short sitting on a plinth. Provide the patient with boxing gloves and instruct the patient to 'box the therapist'!

Client Instructions:
Position yourself (or have someone position you) sitting over the edge of a plinth. Place some boxing gloves on and practice 'boxing your therapist'!

Progression and Variations:
Less advanced:
1. Practice boxing activities sitting in a wheelchair.
2. Ensure thighs and feet are well supported.
3. Decrease reaching distance.

More advanced:
1. Sit on stools of varied heights.
2. Sit with feet unsupported.
3. Increase reaching distance.

Precautions:
1. Ensure that the patient does not fall forward.
Skill practice - balance - propping in long sitting - 1.

Physiotherapist Aim:
To improve the ability to prop in long sitting.

Client Aim:
To improve your ability to prop in long sitting.

Physiotherapist Instructions:
Position the patient in long sitting. Instruct the patient to transfer their weight from in front of their hips to behind their hips.

Client Instructions:
Position yourself (or have someone position you) in long sitting. Practice transferring your weight from in front of your hips to behind your hips.

Progression and Variations:
Less advanced:
1. Decrease the excursion of movement.

More advanced:
1. Increase the excursion of movement.

Precautions:
1. Preserve tenodesis grasp.


Physiotherapist Aim:
To improve the ability to prop in long sitting.

Client Aim:
To improve your ability to prop in long sitting.

Physiotherapist Instructions:
Position the patient in long sitting. Instruct the patient to transfer their weight from in front of their hips to behind their hips.

Client Instructions:
Position yourself (or have someone position you) in long sitting. Practice transferring your weight from in front of your hips to behind your hips.

Progression and Variations:
Less advanced:
1. Practice transferring weight between hands.

More advanced:
1. Practice functional tasks in this position.

Precautions:
1. Preserve tenodesis grasp.
Skill practice - balance - reaching - seated.

Physiotherapist Aim:
To improve the ability to sit unsupported.

Client Aim:
To improve your ability to sit unsupported.

Physiotherapist Instructions:
Position the patient in short sitting on a plinth. Instruct the patient to reach forward for objects without using their other hand for support.

Client Instructions:
Position yourself (or have someone position you) sitting over the edge of a plinth. Practice reaching forwards for objects without using your other hand for support.

Progression and Variations:
Less advanced:
1. Practice similar activities sitting in wheelchair.
2. Ensure thighs and feet are well supported.
3. Decrease reaching distance.

More advanced:
1. Decrease thigh support.
2. Practice on different height stools with varying amount of thigh support.
3. Increase reaching distance.
4. Instruct the patient to carry out different tasks.
5. Instruct patient to move objects between their two hands.

Precautions:
1. Ensure that the patient does not fall forwards.

Skill practice - balance - wheelchair maintenance.

Physiotherapist Aim:
To improve the ability to dismantle and maintain wheelchair.

Client Aim:
To improve your ability to dismantle and maintain your wheelchair.

Physiotherapist Instructions:
Position the patient on the plinth. Instruct the patient to dismantle the wheelchair.

Client Instructions:
Position yourself on the plinth. Dismantle the wheelchair.

Progression and Variations:
Less advanced:
1. Practice in a supported sitting environment.
2. Practice with the wheelchair on the plinth.
3. Practice each component of the task.

More advanced:
1. Practice the task in different environments such as the car.
Skill practice - bed mobility - moving legs across bed - long sitting.

Physiotherapist Aim:
To improve the ability to move legs across bed in long sitting.

Client Aim:
To improve your ability to move your legs across the bed in long sitting.

Physiotherapist Instructions:
Position the patient in long sitting on a plinth. Instruct the patient to use their upper limbs to move their legs across the plinth.

Client Instructions:
Position yourself (or have someone position you) on a plinth with your legs out in front of you. Practice using your upper limbs to move your legs across the plinth.

Progression and Variations:
Less advanced:
1. Practice in a supported sitting position.
2. Place the legs on a slide sheet.
3. Ensure the patient is wearing slippery pants.
4. Remove the shoes.

More advanced:
1. Position client on a soft mattress.
2. Practice task in different environments.

Skill practice - bed mobility - rolling - 1.

Physiotherapist Aim:
To improve the ability to roll over in bed.

Client Aim:
To improve your ability to roll over in bed.

Physiotherapist Instructions:
Position the patient supine on a plinth with elbow extension splints in situ and the two wrists connected together. Instruct the patient to roll over by rapidly moving their arms across their body.

Client Instructions:
Position yourself (or have someone position you) on your back with splints on your elbows and your wrists connected together. Practice rolling over by rapidly moving your arms across your body.

Progression and Variations:
Less advanced:
1. Place pillow behind back so patient is 1/4 off supine.
2. Flex hips and knees.
3. Cross ankles.

More advanced:
1. Remove assistive devices.
2. Position client on a soft mattress.
3. Practice task in different environments.
Skill practice - bed mobility - rolling - 2.

Physiotherapist Aim:
To improve the ability to roll over in bed.

Client Aim:
To improve your ability to roll over in bed.

Physiotherapist Instructions:
Position the patient supine on a plinth with elbow extension splints in situ. Instruct the patient to roll over by rapidly moving their arms across their body.

Client Instructions:
Position yourself (or have someone position you) on your back. Place (or get someone to place for you) splints on your arms to hold your elbows straight. Practice rolling over by rapidly moving your arms across your body.

Progression and Variations:

- Less advanced:
  1. Place pillow behind back so patient is 1/4 off supine.
  2. Flex hips and knees.
  3. Cross ankles.

- More advanced:
  1. Position client on a soft mattress.
  2. Practice task in different environments.

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Skill practice - bed mobility - rolling - 3.

Physiotherapist Aim:
To improve the ability to roll over in bed.

Client Aim:
To improve your ability to roll over in bed.

Physiotherapist Instructions:
Position the patient supine on a plinth with elbow extension splints in situ and a weight around one wrist. Instruct the patient to roll over by rapidly moving their arms across their body.

Client Instructions:
Position yourself (or have someone position you) on your back. Place (or get someone to place for you) a weight around one wrist and splints on your arm to hold your elbows straight. Practice rolling over by rapidly moving your arms across your body.

Progression and Variations:

- Less advanced:
  1. Place pillow behind back so patient is 1/4 off supine.
  2. Flex hips and knees.
  3. Cross ankles.

- More advanced:
  1. Position client on a soft mattress.
  2. Practice task in different environments.
Skill practice - bed mobility - supine to sit - 1.

Physiotherapist Aim:
To improve the ability to move from lying to sitting.

Client Aim:
To improve your ability to move from lying to sitting.

Physiotherapist Instructions:
Position the patient in half sidelying on a plinth. Instruct the patient to `walk` on their elbows around the side of their body. Once their elbows are aligned with their knees, instruct the patient to use their top arm to pull up into long sitting.

Client Instructions:
Position yourself (or have someone position you) on your side on a plinth. Practice `walking` on your elbows around the side of your body. Once your elbows are aligned with your knees, practice using your top arm to pull up into sitting.

Progression and Variations:

Less advanced:
1. Practice transferring body weight from one elbow to the other.
2. Place stools under the elbows and practice transferring body weight from one elbow to the other.
3. Practice the task with a high plinth beside the body. `Walk` the elbows along the plinth.
4. Practice the task in reverse.

More advanced:
1. Practice the task on a soft mattress.
2. Practice the task in different environments.

Precautions:
1. Maintain the integrity of the skin over elbows. Can use elbow pads for this purpose.

Skill practice - bed mobility - supine to sit - 2.

Physiotherapist Aim:
To improve the ability to move from lying to sitting.

Client Aim:
To improve your ability to move from lying to sitting.

Physiotherapist Instructions:
Position the patient in half sidelying on a plinth. Once their elbows are aligned with their knees, instruct the patient to use their top arm to pull up into long sitting.

Client Instructions:
Position yourself (or have someone position you) in half sidelying. Practice using your top arm to pull up into long sitting.

Progression and Variations:

Less advanced:
1. Place a stool under the propping elbow.
2. Position the propping elbow onto a higher plinth beside the patient.
3. Secure the hand that is being used to pull up.

More advanced:
1. Position client on a soft mattress.
2. Practice task in different environments.

Precautions:

Injury Type
- C6 Quadriplegia
- C7 Quadriplegia
- Incomplete
- Paraplegic

Difficulty Level
- Advanced
- Beginner
- Intermediate

Equipment Required
- Plinth

Exercise Type
- Skill practice - supine to sit

Body Part
- Lower arm
- Neck/upper back
- Upper arm

Exercise Submitted
- Sydney Spinal Units

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Skill practice - bed mobility - supine to sit - moving on elbows in sidelying.

Physiotherapist Aim:
To improve ability to move from lying to sitting.

Client Aim:
To improve your ability to move from lying to sitting.

Physiotherapist Instructions:
Position the patient in half sidelying with their weight through flexed elbows. Instruct the patient to shift their weight across onto one elbow whilst moving the other elbow around towards their knees.

Client Instructions:
Position yourself (or have someone position you) on your side with your weight through your elbows. Practice shifting your weight across onto one elbow whilst moving your other elbow around towards your knees.

Progression and Variations:
Less advanced:
1. Position BP cuffs or pressure sensitive biofeedback devices under the elbows to provide feedback about weight relief.
2. Place stools under the elbows and practice transferring body weight from one elbow to the other.
3. Practice the task with a high plinth beside the body. Shift weight from side to side on the plinth and move the elbow.
4. Use a harness device to help decrease amount of weight through the upper limbs.

More advanced:
1. Practice the task on a soft mattress.
2. Practice the task in different environments.

Precautions:
1. Maintain the integrity of the skin over elbows. Can use elbow pads for this purpose.

Skill practice - bed mobility - supine to sit - using pockets.

Physiotherapist Aim:
To improve the ability to move from supine to sitting.

Client Aim:
To improve your ability to move from supine to sitting.

Physiotherapist Instructions:
Position the patient in supine with their hands in their pockets (palms down). Instruct the patient to pull up into sitting using their wrist extensors and biceps.

Client Instructions:
Position yourself (or have someone position you) on your back with your hands in your pockets (palms down). Pull up into sitting using your wrist muscles and your biceps.
Skill practice - bed mobility - supine to sit - weight transfer on elbows in sidelying.

Physiotherapist Aim:
To improve the ability to move from lying to sitting.

Client Aim:
To improve your ability to move from lying to sitting.

Physiotherapist Instructions:
Position the patient in half sidelying with their weight through flexed elbows. Instruct the patient to shift their weight from one elbow across onto the other elbow.

Client Instructions:
Position yourself (or have someone position you) on your side with your weight through your elbows. Practice shifting your weight from one elbow across onto the other elbow.

Progression and Variations:
Less advanced:
1. Position BP cuffs or pressure sensitive biofeedback devices under the elbows to provide feedback about weight relief.
2. Place stools under the elbows and practice transferring body weight from one elbow to the other.
3. Practice the task with a high plinth beside the body. Shift weight from side to side on the plinth.
4. Use a harness device to help decrease amount of weight through the upper limbs.

More advanced:
1. Practice the task on a soft mattress.
2. Practice the task in different environments.

Precautions:
1. Maintain the integrity of the skin over elbows. Can use elbow pads for this purpose.

Skill practice - bed mobility - weight transfer - prone.

Physiotherapist Aim:
To improve the ability to bear weight through elbows in prone.

Client Aim:
To improve your ability to bear weight through your elbows whilst lying on your stomach.

Physiotherapist Instructions:
Position the patient in prone with their weight through their elbows. Instruct the patient to shift their weight from one elbow across onto the other elbow.
Client Instructions:
Position yourself (or have someone position you) on your stomach with your weight borne through your elbows. Practice shifting your weight from one elbow across onto your other elbow.

Progression and Variations:
Less advanced:
1. Position BP cuffs or pressure sensitive biofeedback devices under the elbows to provide feedback about weight relief.
2. Use a harness device to help decrease amount of weight through the upper limbs.

More advanced:
1. Practice ‘walking’ from side to side on your elbows in this position.

Precautions:
1. Maintain the integrity of the skin over elbows. Can use elbow pads for this purpose.

Skill practice - in wheelchair - changing wheels.

Physiotherapist Aim:
To improve the ability to remove a wheel whilst remaining seated in the wheelchair.

Client Aim:
To improve your ability to remove a wheel whilst remaining seated in your wheelchair.

Physiotherapist Instructions:
Instruct the patient to lean their wheelchair against a wall or bed and balance on one wheel. Use one hand to remove the unweighted wheel from the wheelchair.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair next to a wall or bed. Practice tilting your wheelchair onto the wall or bed and then balancing on one wheel. Use one hand to remove the unweighted wheel from the wheelchair.

Progression and Variations:
Less advanced:
1. Practice tilting the wheelchair without removing the wheel.

More advanced:
1. Practice the task in different environments.

Skill practice - in wheelchair - lifting.

Physiotherapist Aim:
To improve the ability to vertically lift body whilst seated in the wheelchair.

Client Aim:
To improve your ability to lift yourself whilst seated in your wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair with both hands on the wheels. Instruct the patient to depress their shoulders and lift their bottom off the cushion.

Client Instructions:
Position yourself in your wheelchair with both hands on the wheels. Push down through your shoulders and lift your bottom off the cushion.

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Progression and Variations:
Less advanced:
1. Lean forward onto your knees or a plinth to pressure relieve.
2. Lift through your elbows.
3. Practice on a plinth lifting through higher blocks.

More advanced:
1. Sustain the lift.

Precautions:
1. Caution required to prevent forward fall from wheelchair.

Skill practice - in wheelchair - reaching to floor - 1.

Physiotherapist Aim:
To improve the ability to reach to the floor from the wheelchair.

Client Aim:
To improve your ability to reach to the floor from the wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair. Instruct the patient to hook one arm over the back of the wheelchair and to reach for the object with the other arm.

Client Instructions:
Position yourself in your wheelchair. Hook one arm over the back of the wheelchair and practice reaching for the object with the other hand.

Progression and Variations:
Less advanced:
1. Decrease distance between the object and the wheelchair.
2. Decrease weight of the object.

More advanced:
1. Increase distance between the object and the wheelchair.
2. Increase weight of the object.

Skill practice - in wheelchair - reaching to floor - 2.

Physiotherapist Aim:
To improve the ability to pick objects off the floor.

Client Aim:
To improve your ability to pick objects off the floor.

Physiotherapist Instructions:
Position the patient in their wheelchair. Instruct the patient to reach down and pick an object off the floor.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair. Practice reaching down and picking an object off the floor.
Progression and Variations:

Less advanced:
1. Decrease the distance between the object and the wheelchair.
2. Decrease the weight of the object.
3. Place the object on a stool.

More advanced:
1. Increase the distance between the object and the wheelchair.
2. Increase the weight of the object.
3. Practice picking up an object that needs bilateral manipulation.

Skill practice - in wheelchair - reaching to the side.

Physiotherapist Aim:
To improve the ability to reach to the side from the wheelchair.

Client Aim:
To improve your ability to reach to the side from the wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair. Instruct the patient to prop on their elbow, reach for an object and then return to sitting.

Client Instructions:
Position yourself in your wheelchair. Practice propping on one elbow, reaching for an object and then returning to sitting.

Progression and Variations:

Less advanced:
1. Decrease the distance between the object and the wheelchair.
2. Decrease the weight of the object.

More advanced:
1. Increase the distance between the object and the wheelchair.
2. Increase the weight of the object.
3. Practice picking up an object that needs bilateral manipulation.

Precautions:
1. Maintain the integrity of the skin over elbows. Can use elbow pads for this purpose.

Skill practice - sit to stand.

Physiotherapist Aim:
To improve the ability to move from sitting to standing.

Client Aim:
To improve your ability to stand up.

Physiotherapist Instructions:
Position the patient in sitting. Instruct the patient to sit to stand.

Client Instructions:
Position yourself in sitting. Practice standing up and sitting down.

Progression and Variations:

Less advanced:

C7 Quadriplegia
Incomplete
Paraplegic
Difficulty Level
Advanced
Beginner
Intermediate
Equipment Required
Miscellaneous
Exercise Type
Skill practice - in wheelchair
Body Part
Non specific
Exercise Submitted
Sydney Spinal Units

Injury Type
C6 Quadriplegia
C7 Quadriplegia
Incomplete
Paraplegic
Difficulty Level
Advanced
Beginner
Intermediate
Equipment Required
No equipment
Exercise Type
Skill practice - in wheelchair
Body Part
Non specific
Exercise Submitted
Sydney Spinal Units

Precautions:

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1. Increase the height of the chair.

More advanced:
1. Decrease the height of the chair.
2. Incorporate a task into sit to stand.
3. Practice standing up from different chairs.

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**Skill practice - stepping.**

**Physiotherapist Aim:**
To improve stance or swing phase of gait.

**Client Aim:**
To improve your ability to step.

**Physiotherapist Instructions:**
Position the patient in standing. Instruct the patient to step forward.

**Client Instructions:**
Position yourself in standing. Step forward.

**Progression and Variations:**

Less advanced:
1. Wear a splint on stance leg.
2. Take smaller steps.

More advanced:
1. Take larger steps.

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**Skill practice - transfer - floor to chair - between large stools.**

**Physiotherapist Aim:**
To improve the ability to transfer from the floor to wheelchair using sideward approach.

**Client Aim:**
To improve your ability to transfer from the floor to wheelchair.

**Physiotherapist Instructions:**
Position the patient in short sitting on a small stool. Place a second higher stool next to the patient. Instruct the patient to lift their body from one stool to the other.

**Client Instructions:**
Position yourself (or have someone position you) sitting on a small stool. Place a second higher stool next to you. Practice moving from one stool to the other.

**Progression and Variations:**

Less advanced:
1. Decrease the height difference between stools.
2. Increase the size of the transfer surface.

More advanced:
1. Increase the height difference between stools.
2. Decrease the size of the transfer surface.

Skill practice - transfer - floor to chair - between small stools.

Physiotherapist Aim:
To improve the ability to transfer from the floor to wheelchair using sideward approach.

Client Aim:
To improve your ability to transfer from the floor to wheelchair.

Physiotherapist Instructions:
Position the patient in short sitting on a small stool. Place a second higher stool next to the patient. Instruct the patient to lift their body from one stool to the other.

Client Instructions:
Position yourself (or have someone position you) sitting on a small stool. Place a second higher stool next to you. Practice moving from one stool to the other.

Progression and Variations:
Less advanced:
1. Decrease the height difference between stools.
2. Increase the size of the transfer surface.

More advanced:
1. Increase the height difference between stools.
2. Decrease the size of the transfer surface.

Skill practice - transfer - floor to chair - front on.

Physiotherapist Aim:
To improve the ability to transfer from floor to wheelchair.

Client Aim:
To improve your ability to transfer from floor to wheelchair.

Physiotherapist Instructions:
Position the patient on the floor in front of their wheelchair. Instruct the patient to grasp the frame of the wheelchair and lift themselves upwards into the wheelchair.

Client Instructions:
Position yourself (or have someone position you) on the floor in front of your wheelchair. Practice grasping the frame of your wheelchair and lift yourself upwards into the wheelchair.

Progression and Variations:
Less advanced:
1. Practice from a stool positioned in front of the wheelchair.
2. Instruct the patient to rest half way up the lift on either a strap or strategically placed small stool.

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More advanced:
1. Lift up onto a higher surface.
2. Practice the transfer in different environments.

Precautions:
1. Maintain the integrity of skin over buttocks.

Skill practice - transfer - floor to chair - on plinth.

Physiotherapist Aim:
To improve the ability to transfer from the floor to wheelchair using backwards approach.

Client Aim:
To improve your ability to transfer from the floor to wheelchair.

Physiotherapist Instructions:
Position the patient in long sitting on a plinth. Place a second but higher plinth immediately behind the patient. Instruct the patient to lift up backwards onto the second plinth.

Client Instructions:
Position yourself (or have someone position you) on a plinth with your legs out straight in front of you. Place a second but higher plinth immediately behind you. Practice lifting up backwards onto the second plinth being careful not to drag your lower back up the second plinth.

Progression and Variations:
Less advanced:
1. Lower height of the second plinth.

More advanced:
1. Increase the height of the second plinth.

Precautions:
1. Maintain integrity of skin over the sacrum/back.

Skill practice - transfer - floor to chair - stool to wheelchair.

Physiotherapist Aim:
To improve the ability to transfer from the floor to wheelchair using sideward approach.

Client Aim:
To improve your ability to transfer from the floor to wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair next to a stool of the same height. Instruct the patient to move across to the stool.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair next to a stool of the same height. Practice moving across to the stool.

Progression and Variations:
Less advanced:

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1. Decrease the height difference between stools.
2. Increase the size of the transfer surface.

More advanced:
1. Increase the height difference between stools.
2. Decrease the size of the transfer surface.

**Skill practice - transfer - floor to chair.**

**Physiotherapist Aim:**
To improve the ability to transfer from the floor to wheelchair using backwards approach.

**Client Aim:**
To improve your ability to transfer from the floor to wheelchair.

**Physiotherapist Instructions:**
Position the patient on the floor with their wheelchair immediately behind them. Instruct the patient to place their hands on the frame of the wheelchair and lift up backwards into the wheelchair.

**Client Instructions:**
Position yourself (or have someone position you) on the floor with your wheelchair immediately behind you. Place your hands on the frame of your wheelchair. Practice lifting up backwards into your wheelchair.

**Progression and Variations:**
Less advanced:
1. Practice from a stool positioned in front of the wheelchair.
2. Instruct the patient to rest half way up the lift on either a strap or strategically placed small stool.

More advanced:
1. Lift up onto a higher surface.
2. Practice the transfer in different environments.

**Precautions:**
1. Maintain integrity of skin over buttocks.

**Skill practice - transfer - horizontal - between two plinths - 1.**

**Physiotherapist Aim:**
To improve the ability to transfer over gaps.

**Client Aim:**
To improve your ability to transfer over gaps.

**Physiotherapist Instructions:**
Position the patient on the edge of a plinth in short sitting. Instruct the patient to lift across onto the adjacent plinth. They will need to place one hand on each plinth.

**Client Instructions:**
Position yourself on the edge of a plinth in short sitting. Lift across onto the adjacent plinth. You will need to place one hand on each plinth.

**Progression and Variations:**
Skill practice - transfer - horizontal - between two plinths - 2.

Physiotherapist Aim:
To improve the ability to transfer between two chairs.

Client Aim:
To improve your ability to transfer between two chairs.

Physiotherapist Instructions:
Position the patient in short sitting on a plinth. Position a second plinth perpendicular to the first. Instruct the patient to transfer between the two plinths.

Client Instructions:
Position yourself (or have someone position you) sitting on a plinth. Position a second plinth side-on to the first. Practice transferring between the two plinths.

Progression and Variations:

Less advanced:
1. Lower the height of the plinth.
2. Decrease the distance between plinths.

More advanced:
1. Raise height of plinth.
2. Increase the distance between the wheelchair and the plinth.
3. Practice transferring onto a soft mattress.
4. Practice the task in different environments.
5. Place the hands asymmetrically (in terms of anterior/posterior direction, lateral direction and height).

Skill practice - transfer - horizontal - lifting off elbows.

Physiotherapist Aim:
To improve the ability to lift body weight through the upper limbs.

Client Aim:
To improve your ability to lift when transferring and relieving pressure.

Physiotherapist Instructions:
Position the patient in long sitting with their elbows on two stools. Instruct the patient to lift their body weight through their elbows.

Client Instructions:
Position yourself (or have someone position you) with your legs out straight in front of you on a plinth. Place your elbows on two stools. Practice lifting your body weight.
through your elbows.

**Progression and Variations:**

**Less advanced:**
1. Position BP cuffs or pressure sensitive biofeedback devices under the elbows to provide feedback about weight relief.
2. Use a harness device to help decrease amount of weight through the upper limbs.

**More advanced:**
1. Perform same activity in short sitting.
2. Place stools further away from body.
3. Place stools asymmetrically (in terms of anterior/posterior direction, lateral direction and height).

**Precautions:**
1. Maintain the integrity of the skin over elbows. Can use elbow pads for this purpose.

### Skill practice - transfer - horizontal - long sitting - legs up first - 1.

**Physiotherapist Aim:**
To improve the ability to get legs up onto the bed in preparation for transferring.

**Client Aim:**
To improve your ability to get your legs up onto the bed in preparation for transferring.

**Physiotherapist Instructions:**
Position the patient in their wheelchair next to a plinth. Instruct the patient to use one arm to lift one leg up onto the plinth. Instruct the patient to use their other arm to hold themselves in an upright position.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair next to a plinth. Practice using one arm to lift one leg up onto the plinth. Use your other arm to hold yourself in an upright position.

**Progression and Variations:**

**Less advanced:**
1. Practice hooking the supporting arm around the back of the wheelchair.
2. Practice leaning forward to get wrist under leg.
3. Lower the height of the plinth.
4. Practice lifting their legs up onto a small stool.
5. If seated in a power wheelchair, adjust the tilt of the chair so that the feet are raised.
6. Position a stool on the plinth and instruct the client to lean through their elbow on the stool rather than hook behind the back of the wheelchair.
7. Use a strap to help lift the leg.
8. Remove shoes.

**More advanced:**
1. Raise the height of the plinth.
2. Leave shoes on.
3. Perform activity on a soft mattress.
4. Practice the activity in different environments.

**Precautions:**
1. Ensure that wheelchair does not flip backwards.
Skill practice - transfer - horizontal - long sitting - legs up first - 2.

Physiotherapist Aim:
To improve the ability to get second leg up onto the bed in preparation for transferring.

Client Aim:
To improve your ability to get your second leg up onto the bed in preparation for transferring.

Physiotherapist Instructions:
Position the patient in their wheelchair next to a plinth with one leg up on the plinth. Instruct the patient to use one arm to lift the second leg up onto the plinth. Instruct the patient to use their other arm to hold themselves in an upright position.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair next to a plinth with one leg up on the plinth. Practice using one arm to lift your second leg up onto the plinth. Use your other arm to hold yourself in an upright position.

Progression and Variations:
Less advanced:
1. Practice hooking the supporting arm around the back of the wheelchair.
2. Practice leaning forward to get the wrist under the leg.
3. Lower the height of the plinth.
4. Practice lifting their legs up onto a small stool.
5. If seated in a power wheelchair, adjust the tilt of the chair so that the feet are raised.
6. Position a stool on the plinth and instruct the client to lean through their elbow on the stool rather than hook behind the back of the wheelchair.
7. Use a strap to help lift the leg.
8. Remove shoes.

More advanced:
1. Raise the height of the plinth.
2. Leave shoes on.
3. Perform activity on a soft mattress.
4. Practice the activity in different environments.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Skill practice - transfer - horizontal - long sitting - lifting - 1.

Physiotherapist Aim:
To improve the ability to vertically lift body weight.

Client Aim:
To improve your ability to lift your body weight.

Physiotherapist Instructions:
Position the patient in long sitting on a plinth. Instruct the patient to lift their body weight through extended elbows.

Client Instructions:
Position yourself (or have someone position you) on a plinth with your legs out straight in front of you. Practice lifting your body weight through your hands keeping

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your elbows straight.

**Progression and Variations:**

**Less advanced:**
1. Position scales (or BP cuffs or pressure sensitive biofeedback devices) under the hands or bottom to provide feedback about weight relief.
2. Use a harness device to help decrease amount of weight through the upper limbs.
3. Position small block under hands or under bottom (depending on length of arms in relation to trunk).
4. Place slide sheet (or the alike) under feet.
5. Remove shoes.
6. Ensure patient is wearing slippery pants.

**More advanced:**
1. Perform same activity in short sitting.
2. Place hands on raised blocks.
3. Place hands further away from body.
4. Place hands asymmetrically (in terms of anterior/posterior direction, lateral direction and height).
5. Practice the activity in different environments.

**Precautions:**
1. Preserve tenodesis grasp.

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**Skill practice - transfer - horizontal - long sitting - lifting - 2.**

**Physiotherapist Aim:**
To improve the ability to transfer.

**Client Aim:**
To improve your ability to transfer.

**Physiotherapist Instructions:**
Position the patient in long sitting. Instruct the patient to depress their shoulders and lift their bottom off the bed.

**Client Instructions:**
Position yourself in long sitting. Push down through your shoulders and lift your bottom off the bed.

**Progression and Variations:**

**Less advanced:**
1. Position scales (or BP cuffs or pressure sensitive biofeedback devices) under the hands or bottom to provide feedback about weight relief.
2. Use a harness device to help decrease amount of weight through the upper limbs.
3. Position blocks under the hands.

**More advanced:**
1. Perform same activity in short sitting.
2. Place hands further away from body.
3. Place hands asymmetrically (in terms of anterior/posterior direction, lateral direction and height).

**Precautions:**
1. Preserve tenodesis grasp.
Skill practice - transfer - horizontal - long sitting - moving across - 1.

Physiotherapist Aim:
To improve the ability to transfer from the wheelchair to bed.

Client Aim:
To improve your ability to transfer from the wheelchair to bed.

Physiotherapist Instructions:
Position the patient in their wheelchair next to a plinth with both legs up on the plinth. Instruct the patient to move across onto the plinth.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair next to a plinth with both legs up on the plinth. Practice moving across onto the plinth.

Progression and Variations:
Less advanced:
1. Raise the height of the wheelchair in relation to the plinth.
2. Tilt the wheelchair downwards so it helps the patient move forwards (may need to use blocks under the back of the wheelchair).
3. Position the patient on a foam-based cushion without a well rather than an air-based cushion.
4. Practice bearing weight through the upper limbs on a plinth.
5. Practice moving sideward on a plinth.
6. Remove shoes.
7. Ensure patient is wearing slippery pants and/or sitting on a slippery cushion cover.
8. Use a slideboard.

More advanced:
1. Raise the height of the plinth.
2. Leave shoes on.
3. Perform activity on a soft mattress.
4. Practice the activity in different environments.


Physiotherapist Aim:
To improve the ability to move from wheelchair to bed with legs up.

Client Aim:
To improve your ability to move from your wheelchair to a bed with your legs up.

Physiotherapist Instructions:
Position the patient on the front edge of their wheelchair with their legs up on the bed. Ensure that one of the patient’s hands is placed on the front edge of their cushion and the other hand on the bed. Instruct the patient to move their bottom across onto the bed.

Client Instructions:
Position yourself (or have someone position you) on the front edge of your wheelchair with your legs up on the bed. Ensure that one of your hands is placed on the front edge of your cushion and the other hand on the bed. Practice moving your bottom across onto the bed.

Progression and Variations:
Less advanced:
1. Raise the height of the plinth.
2. Leave shoes on.
3. Perform activity on a soft mattress.
4. Practice the activity in different environments.

Injury Type
C6 Quadriplegia
C7 Quadriplegia
Incomplete

Difficulty Level
Advanced
Beginner
Intermediate

Equipment Required
Plinth

Exercise Type
Skill practice - transfers

Body Part
Non specific

Exercise Submitted
Sydney Spinal Units

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1. Use a slideboard.
2. Lower the height of the plinth.
3. Position the patient on a firm foam-based cushion without a well.
4. Tilt the wheelchair forwards.
5. Practice moving sidelyards on the edge of a plinth.

More advanced:
1. Raise height of plinth.
2. Transfer onto a soft mattress.
3. Increase the distance between the wheelchair and the plinth.


Physiotherapist Aim:
To improve the ability to move from wheelchair to bed with legs up.

Client Aim:
To improve your ability to move from your wheelchair to a bed with your legs up.

Physiotherapist Instructions:
Position the patient on the front edge of their wheelchair with their legs up on the bed. Ensure that one of the patient’s hands is placed on the front edge of their cushion and the other hand on the bed. Instruct the patient to move their bottom across onto the bed.

Client Instructions:
Position yourself (or have someone position you) on the front edge of your wheelchair with your legs up on the bed. Ensure that one of your hands is placed on the front edge of your cushion and the other hand on the bed. Practice moving your bottom across onto the bed.

Progression and Variations:
Less advanced:
1. Use a slideboard.
2. Lower the height of the plinth.
3. Position the patient on a firm foam-based cushion without a well.
4. Tilt the wheelchair forwards.
5. Practice moving sidelyards on the edge of a plinth.

More advanced:
1. Raise height of plinth.
2. Transfer onto a soft mattress.
3. Increase the distance between the wheelchair and the plinth.

Skill practice - transfer - horizontal - long sitting - slideboard.

Physiotherapist Aim:
To improve the ability to transfer horizontally with a slideboard.

Client Aim:
To improve your ability to transfer from wheelchair to bed with a slideboard.

Physiotherapist Instructions:
Position the patient on the front edge of their wheelchair next to a plinth with a slideboard between their wheelchair and the plinth. Instruct the patient to lift across onto the plinth. They will need to place one hand on the far wheel and the other hand...
on the plinth.

**Client Instructions:**
Position yourself (or have someone position you) on the front edge of your wheelchair next to a plinth with a slideboard between your wheelchair and the plinth. Practice lifting across onto the plinth. You will need to place one hand on the far wheel and the other hand on the plinth.

**Progression and Variations:**

Less advanced:
1. Lower the height of the plinth.
2. Position the patient on a firm foam-based cushion without a well.
3. Tilt the wheelchair forwards.
4. Practice moving sideward on the edge of a plinth.

More advanced:
1. Raise height of plinth.
2. Transfer onto a soft mattress.
3. Increase the distance between the wheelchair and the plinth.

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**Skill practice - transfer - horizontal - moving forward in wheelchair - quadriplegic - 1.**

**Physiotherapist Aim:**
To improve the ability to move bottom forwards in the wheelchair in preparation for transferring.

**Client Aim:**
To improve your ability to move your bottom forwards in the wheelchair.

**Physiotherapist Instructions:**
Position the patient in their wheelchair. Instruct the patient to lean over the back of their wheelchair so as to maneuver their hands behind their hips. Using wrist extension get the patient to pivot their bottom forward in their wheelchair.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair. Lean over the back of your wheelchair so as to maneuver your hands behind your hips. Practice using your wrists to pivot your bottom forward in your wheelchair.

**Progression and Variations:**

Less advanced:
1. Lower height of backrest.
2. Tilt wheelchair forwards.
3. Position the patient on a foam-based cushion without a well rather than an air-based cushion.
4. Ensure patient is wearing slippery pants and/or sitting on a slippery cushion cover.
5. Drop feet off footplate.
6. Use firm backrest.
7. Position the patient slouched in the wheelchair.

More advanced:
1. Practice task in usual clothing in usual wheelchair set up.

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Skill practice - transfer - horizontal - moving forward in wheelchair - quadriplegic - 2.

Physiotherapist Aim:
To improve the ability to move forwards in wheelchair.

Client Aim:
To improve your ability to move yourself forward in the wheelchair.

Physiotherapist Instructions:
Position the patient in the wheelchair with their hands behind their back. Instruct the patient to lean out the back of their wheelchair and use wrist extension to pivot their bottom forwards.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your hands behind your back. Practice leaning out the back of your wheelchair and using your wrists to pivot your bottom forwards.

Progression and Variations:
Less advanced:
1. Tilt the wheelchair forwards.
2. Position the patient on a foam-based cushion without a well rather than an air-based cushion.
3. Ensure patient is wearing slippery pants and/or sitting on a slippery cushion cover.
4. Drop feet off footplate.
5. Raise the wheels in relation to the seat of the wheelchair.

More advanced:
1. Practice the task in usual clothing with usual wheelchair set up.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Skill practice - transfer - horizontal - rotation of trunk about shoulders.

Physiotherapist Aim:
To improve the ability to lift body weight through upper limbs.

Client Aim:
To improve your ability to lift.

Physiotherapist Instructions:
Position the patient in short sitting in front of a second higher plinth. Instruct the patient to lift their body weight through their hands while they rotate about their shoulders.

Client Instructions:
Position yourself (or have someone position you) on the edge of a plinth in front of a second higher plinth. Practice lifting your body weight through your hands while you rotate about your shoulders.

Progression and Variations:
Less advanced:
1. Position scales (or BP cuffs or pressure sensitive biofeedback devices) under the hands or bottom to provide feedback about weight relief.
2. Use a harness device to help decrease amount of weight through the upper limbs.
3. Place blocks under the hands.

Precautions:

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More advanced:
1. Remove the plinth from in front of the patient.
2. Place the hands further away from body.
3. Place the hands asymmetrically (in terms of anterior/posterior direction, lateral direction and height).
4. Practice sustaining the position.


Physiotherapist Aim:
To improve the ability to transfer between wheelchair and bed.

Client Aim:
To improve your ability to transfer between wheelchair and bed.

Physiotherapist Instructions:
Position the patient on the front edge of their wheelchair next to a plinth. Instruct the patient to lift across onto the plinth. They will need to place one hand on the far wheel and the other hand on the plinth.

Client Instructions:
Position yourself (or have someone position you) on the front edge of your wheelchair next to a plinth. Practice lifting across onto the plinth. You will need to place one hand on the far wheel and the other hand on the plinth.

Progression and Variations:
Less advanced:
1. Use a slideboard.
2. Lower the height of the plinth.
3. Position the patient on a firm foam-based cushion without a well.
4. Tilt the wheelchair forwards.
5. Practice moving sideways on the edge of a plinth.

More advanced:
1. Raise height of plinth.
2. Transfer onto a soft mattress.
3. Increase the distance between the wheelchair and the plinth.


Physiotherapist Aim:
To improve the ability to move from wheelchair to bed.

Client Aim:
To improve your ability to move from wheelchair to bed.

Physiotherapist Instructions:
Position the patient on the front edge of their wheelchair next to a plinth. Instruct the patient to lift across onto the plinth. They will need to place one hand on the far wheel and the other hand on the plinth.

Client Instructions:
Position yourself (or have someone position you) on the front edge of your wheelchair next to a plinth. Practice lifting across onto the plinth. You will need to place one hand on the far wheel and the other hand on the plinth.

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Progression and Variations:

Less advanced:
1. Use a slideboard.
2. Lower the height of the plinth.
3. Position the patient on a firm foam-based cushion without a well.
4. Tilt the wheelchair forwards.
5. Practice moving sidewards on the edge of a plinth.

More advanced:
1. Raise height of plinth.
2. Transfer onto a soft mattress.
3. Increase the distance between the wheelchair and the plinth.

Skilled practice - transfer - horizontal - short sitting - moving forward in wheelchair - 1.

Physiotherapist Aim:
To improve the ability to move forwards in the wheelchair in preparation for transferring.

Client Aim:
To improve your ability to move forwards in the wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair with both hands on the wheels. Instruct the patient to move their bottom forwards in the wheelchair.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with both hands on the wheels. Practice moving your bottom forwards in your wheelchair.

Progression and Variations:

Less advanced:
1. Tilt the wheelchair forwards.
2. Position the patient on a foam-based cushion without a well rather than an air-based cushion.
3. Ensure patient is wearing slippery pants and/or sitting on a slippery cushion cover.
4. Drop feet off footplate.
5. Raise the wheels in relation to the seat of the wheelchair.
6. Position the wheelchair between 2 plinths and practice lifting forwards with hands placed on the plinths.

More advanced:
1. Practice the task in usual clothing with usual wheelchair set up.

Physiotherapist Aim:
To improve the ability to move forwards in wheelchair.

Client Aim:
To improve your ability to move yourself forward in the wheelchair.

Physiotherapist Instructions:
Position the patient in the wheelchair with their hands on the wheels. Instruct the patient to lift through their hands and move their bottom forward in the wheelchair.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your hands on the wheels. Practice lifting through your hands and moving your bottom forward in your wheelchair.

Progression and Variations:
Less advanced:
1. Tilt the wheelchair forwards.
2. Position the patient on a foam-based cushion without a well rather than an air-based cushion.
3. Ensure patient is wearing slippery pants and/or sitting on a slippery cushion cover.
4. Drop feet off footplate.
5. Raise the wheels in relation to the seat of the wheelchair.
6. Position the wheelchair between 2 plinths and practice lifting forwards with hands placed on the plinths.

More advanced:
1. Practice the task in usual clothing with usual wheelchair set up.

Skill practice - transfer - horizontal - slideboard - paraplegic.

Physiotherapist Aim:
To improve the ability to transfer horizontally with a slideboard.

Client Aim:
To improve your ability to transfer from wheelchair to bed with a slideboard.

Physiotherapist Instructions:
Position the patient on the front edge of their wheelchair next to a plinth with a slideboard between their wheelchair and the plinth. Instruct the patient to lift across onto the plinth. They will need to place one hand on the far wheel and the other hand on the plinth.

Client Instructions:
Position yourself (or have someone position you) on the front edge of your wheelchair next to a plinth with a slideboard between your wheelchair and the plinth. Practice lifting across onto the plinth. You will need to place one hand on the far wheel and the other hand on the plinth.

Progression and Variations:
Less advanced:
1. Lower the height of the plinth.
2. Position the patient on a firm foam-based cushion without a well.
3. Tilt the wheelchair forwards.
4. Practice moving sidewards on the edge of a plinth.

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More advanced:
1. Raise height of plinth.
2. Transfer onto a soft mattress.
3. Increase the distance between the wheelchair and the plinth.

Skill practice - transfer - moving around the bed in short sitting.

Physiotherapist Aim:
To improve the ability to move around the bed in short sitting.

Client Aim:
To improve your ability to move around the bed in short sitting.

Physiotherapist Instructions:
Position the patient in short sitting. Instruct the patient to move around the edge of the bed.

Client Instructions:
Position yourself (or have someone position you) over the edge of a bed. Practice moving around the edge of the bed.

Progression and Variations:
Less advanced:
1. Position scales (or BP cuffs or pressure sensitive biofeedback devices) under the hands or bottom to provide feedback about weight relief.
2. Use a harness device to help decrease amount of weight through the upper limbs.
3. Place blocks under the hands.
4. Practice lifting the vertical component of lifting then add in the horizontal component.
5. Place a plinth in front of the patient.

More advanced:
1. Place the hands further away from body.
2. Place the hands asymmetrically (in terms of anterior/posterior direction, lateral direction and height).
3. Practice sustaining the position.
4. Practice the task in different environments.
5. Increase the height of the bed so that the feet are hanging.
6. Decrease the thigh support on the bed.

Skill practice - weight transfer in standing.

Physiotherapist Aim:
To improve the ability to transfer weight for standing and walking.

Client Aim:
To improve your ability to take weight from one foot to the other for standing or walking.

Physiotherapist Instructions:
Position the patient in standing with feet slightly apart. Instruct the patient to transfer weight onto the desired leg.

Client Instructions:
Position yourself in standing with your feet slightly apart. Start with your weight on one leg. Finish with your weight over the opposite leg.
Skill practice - wheelchair mobility - ascending a step using a doorway.

Physiotherapist Aim:
To improve the ability to ascend a step in a wheelchair.

Client Aim:
To improve your ability to ascend a step in a wheelchair.

Physiotherapist Instructions:
Position the patient below a step in their wheelchair. Instruct the patient to use the doorway to pull themselves up over the step.

Client Instructions:
Position yourself (or have someone position you) below a step in your wheelchair. Practice using the doorway to pull yourself up over the step.

Progression and Variations:
Less advanced:
1. Decrease the height of the step.

More advanced:
1. Increase the height of the step.
2. Practice the task in different environments.

Precautions:
1. Caution required to prevent forward fall from wheelchair.

Skill practice - wheelchair mobility - attaining a wheelstand.

Physiotherapist Aim:
To improve the ability to attain a wheelstand.

Client Aim:
To improve your ability to attain a wheelstand.

Physiotherapist Instructions:
Position the patient in their wheelstand. Instruct the patient to flip the wheelchair into a wheelstand.

Client Instructions:
Position yourself (or have someone position you) in your wheelstand. Practice flipping your wheelchair into a wheelstand.

Progression and Variations:
Less advanced:
1. Practice the task on a flat surface.

More advanced:
1. Practice the task in different environments.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Skill practice - wheelchair mobility - descending grassy slopes.

Physiotherapist Aim:
To improve the ability to descend a grassy slope in a wheelchair.

Client Aim:
To improve your ability to descend a grassy slope in a wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair at the top of a grassy slope. Instruct the patient to descend the grassy slope whilst maintaining a wheelstand.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair at the top of a grassy slope. Practice descending the grassy slope whilst maintaining a wheelstand.

Progression and Variations:
Less advanced:
1. Practice on gentle slopes.
2. Practice on a cemented surface.

More advanced:
1. Practice on steeper slopes.
2. Practice the task in different environments.

Precautions:
1. Caution required to prevent forward fall from wheelchair.

Skill practice - wheelchair mobility - descending kerb forwards in a wheelchair.

Physiotherapist Aim:
To improve the ability to descend a kerb forwards in a wheelchair.

Client Aim:
To improve your ability to descend a kerb forwards in a wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair at the edge of a kerb. Instruct the patient to descend the kerb whilst maintaining a wheelstand.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair at the edge of a kerb. Practice descending the kerb whilst maintaining a wheelstand.

Progression and Variations:
Less advanced:
1. Decrease the height of the kerb.
More advanced:
1. Increase the height of the kerb.
2. Practice the task in different environments.

Precautions:
1. Caution required to prevent forward fall from wheelchair.

Skill practice - wheelchair mobility - descending slopes forwards in a wheelchair.

Physiotherapist Aim:
To improve the ability to descend a slope in a wheelchair.

Client Aim:
To improve your ability to descend a slope in a wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair at the top of a slope. Instruct the patient to descend the slope whilst maintaining a wheelstand.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair at the top of a slope. Practice descending the slope whilst maintaining a wheelstand.

Progression and Variations:
Less advanced:
1. Practice on gentle slopes.

More advanced:
1. Practice on steeper slopes.
2. Practice the task in different environments.

Precautions:
1. Caution required to prevent forward fall from wheelchair.

Skill practice - wheelchair mobility - descending stairs backwards in a wheelchair.

Physiotherapist Aim:
To improve the ability to descend a flight of stairs backwards in a wheelchair.

Client Aim:
To improve your ability to descend a flight of stairs backwards in a wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair at the top of a flight of stairs. Instruct the patient to practice lowering themselves down the stairs with one hand on the stair rail and their other hand on the rim of the wheel.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair at the top of a flight of stairs. Practice lowering yourself down the stairs with one hand on the stair rail and your other hand on the rim of the wheel.

Progression and Variations:
Less advanced:
1. Decrease the number and depth of the stairs.

More advanced:
1. Increase the number and depth of the stairs.
2. Practice the task in different environments.

Skill practice - wheelchair mobility - descending stairs forwards in a wheelchair.

Physiotherapist Aim:
To improve the ability to descend stairs in a wheelchair.

Client Aim:
To improve your ability to descend stairs in a wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair at the top of 3-5 stairs. Instruct the patient to descend the stairs whilst maintaining a wheelstand.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair at the top of 3-5 stairs. Practice descending the stairs whilst maintaining a wheelstand.

Progression and Variations:
Less advanced:
1. Decrease the number and depth of the stairs.

More advanced:
1. Increase the depth of the stairs.
2. Practice the task in different environments.

Precautions:
1. Caution required to prevent forward fall from wheelchair.

Skill practice - wheelchair mobility - uprighting wheelchair.

Physiotherapist Aim:
To improve the ability to upright a wheelchair.

Client Aim:
To improve your ability to upright a wheelchair.

Physiotherapist Instructions:
Position the patient in their wheelchair tipped backwards. Instruct the patient to upright the wheelchair using one hand on the floor and the other hand on the rim of the wheel.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair tipped backwards. Practice uprighting the wheelchair using one hand on the floor and the other hand on the rim of the wheel.

Progression and Variations:
Less advanced:
1. Place your hand on a stool rather than on the floor.

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- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

1. Practice the task in different environments.

**Strength - ES - ankle dorsiflexors.**

Physiotherapist Aim:
To strengthen the ankle dorsiflexors.

Client Aim:
To strengthen the muscles at the front of your ankle.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of tibialis anterior.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.

**Strength - ES - anterior deltoid.**

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the anterior deltoid.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.
**Strength - ES - biceps.**

**Physiotherapist Aim:**
To strengthen the elbow flexors.

**Client Aim:**
To strengthen your biceps.

**Physiotherapist Instructions:**
Place the electrodes over the muscle belly of the elbow flexors.

**Client Instructions:**
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

**Precautions:**
1. Perform skin tests.

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**Strength - ES - finger extensors.**

**Physiotherapist Aim:**
To strengthen the finger extensors.

**Client Aim:**
To strengthen your wrist/hand muscles.

**Physiotherapist Instructions:**
Place the electrodes over the muscle belly of the finger extensors.

**Client Instructions:**
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

**Precautions:**
1. Perform skin tests.
Strength - ES - finger flexors.

Physiotherapist Aim:
To strengthen the finger flexors.

Client Aim:
To strengthen your wrist/hand muscles.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the finger flexors.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.

Strength - ES - gastrocnemius.

Physiotherapist Aim:
To strengthen the ankle plantarflexors.

Client Aim:
To strengthen your calf muscles.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the ankle plantarflexors.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
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Strength - ES - gluteal.

Physiotherapist Aim:
To strengthen the hip extensors.

Client Aim:
To strengthen your bottom muscles.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the hip extensors.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.

Strength - ES - knee extensors.

Physiotherapist Aim:
To strengthen the knee extensors.

Client Aim:
To strengthen the muscles at the front of your thigh.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the knee extensors.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.
Strength - ES - knee flexors.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the knee flexors.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.

Strength - ES - middle deltoid.

Physiotherapist Aim:
To strengthen the shoulder abductors.

Client Aim:
To strengthen the muscles at the side of your shoulder.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the middle deltoids.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.
Strength - ES - pectoralis.

Physiotherapist Aim:
To strengthen the shoulder horizontal adductors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the pectoralis.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.

Strength - ES - posterior deltoid.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the posterior deltoids.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.
Strength - ES - rhomboids.

Physiotherapist Aim:
To strengthen the shoulder retractors.

Client Aim:
To strengthen the muscles between your shoulder blades.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the shoulder retractors.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.

Strength - ES - supraspinatus.

Physiotherapist Aim:
To strengthen the supraspinatus.

Client Aim:
To strengthen the muscle at the top of your shoulder.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the supraspinatus.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.
Strength - ES - triceps.

Physiotherapist Aim:
To strengthen the elbow extensors.

Client Aim:
To strengthen your triceps.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the elbow extensors.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.

Strength - ES - wrist extensors.

Physiotherapist Aim:
To strengthen the wrist extensors.

Client Aim:
To strengthen your wrist/hand muscles.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the wrist extensors.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.

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Strength - ES - wrist flexors.

Physiotherapist Aim:
To strengthen the wrist flexors.

Client Aim:
To strengthen your wrist/hand muscles.

Physiotherapist Instructions:
Place the electrodes over the muscle belly of the wrist flexors.

Client Instructions:
Place (or get someone to place for you) the two electrodes over the muscle belly as shown.

Precautions:
1. Perform skin tests.

Strength - ankle - dorsiflexors - sandbag weights - seated.

Physiotherapist Aim:
To strengthen the ankle dorsiflexors.

Client Aim:
To strengthen the muscles at the front of your ankle.

Physiotherapist Instructions:
Position the patient in sitting with their legs over the side of the bed. Attach a weight around the ankle. Instruct the patient to dorsiflex the ankle.

Client Instructions:
Position yourself in sitting. Attach a weight around your ankle. Start with your toes on the floor. Finish with your toes off the floor.

Progression and Variations:
Progress using strength training principles.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
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- Spinal Unit, The Prince of Wales Hospital

Strength - ankle - dorsiflexors/plantarflexors - no weights - sidelying.

Physiotherapist Aim:
To strengthen the ankle dorsiflexors/plantarflexors.

Client Aim:
To strengthen your ankle muscles.

Physiotherapist Instructions:
Position the patient in sidelying. Instruct the patient to dorsiflex and plantarflex the ankle.

Client Instructions:
Position yourself (or have someone position you) in sidelying. Start with your toes pointing down. Finish with your toes pointing up.

Strength - ankle - dorsiflexors/plantarflexors - no weights - supine.

Physiotherapist Aim:
To strengthen the ankle dorsiflexors/plantarflexors.

Client Aim:
To strengthen your ankle muscles.

Physiotherapist Instructions:
Position the patient in supine. Instruct the patient to dorsiflex and plantarflex the ankle.

Client Instructions:
Position yourself (or have someone position you) in supine. Start with your toes pointing down. Finish with your toes pointing up.

Progression and Variations:
Progress using strength training principles.
Strength - ankle - invertors/evertors - no weights - seated.

Physiotherapist Aim:
To strengthen the ankle invertors and evertors.

Client Aim:
To strengthen the muscles at the inside and outside of your ankle.

Physiotherapist Instructions:
Position the patient in sitting. Instruct the patient to invert and evert the ankle.

Client Instructions:
Position yourself (or have someone position you) in sitting. Start with the soles of your feet facing in. Finish with the soles of your feet facing out. Keep your knees still.

Progression and Variations:
Progress using strength training principles.

Strength - ankle - plantarflexors - no weights - standing - block.

Physiotherapist Aim:
To strengthen the ankle plantarflexors.

Client Aim:
To strengthen your calf muscles.

Physiotherapist Instructions:
Position the patient standing on a step with the heels off the edge. Instruct the patient to plantarflex the foot.

Client Instructions:
Position yourself on a step with your heels off the edge. Lift your body weight up onto your toes.

Progression and Variations:
Progress using strength training principles.
Strength - ankle - plantarflexors - no weights - standing - one leg.

Physiotherapist Aim:
To strengthen the ankle plantarflexors.

Client Aim:
To strengthen your calf muscles.

Physiotherapist Instructions:
Position the patient standing on one leg. Instruct the patient to plantarflex the foot.

Client Instructions:
Position yourself standing on one leg. Start with your heel on the ground. Finish with your heel off the ground.

Progression and Variations:
Progress using strength training principles.

Strength - ankle - plantarflexors - no weights - standing.

Physiotherapist Aim:
To strengthen the ankle plantarflexors.

Client Aim:
To strengthen your calf muscles.

Physiotherapist Instructions:
Position the patient in standing. Instruct the patient to plantarflex the feet.

Client Instructions:
Position yourself in standing. Start with your heels on the ground. Finish with your heels off the ground.

Progression and Variations:
Progress using strength training principles.
**Strength - elbow - extensors - free weights - prone.**

**Physiotherapist Aim:**
To strengthen the elbow extensors.

**Client Aim:**
To strengthen your triceps.

**Physiotherapist Instructions:**
Position the patient prone with their arm over the edge of the bed and the elbow flexed. Instruct the patient to extend the elbow.

**Client Instructions:**
Position yourself (or have someone position you) on your stomach with your arm over the edge of the bed. Start with your elbow bent. Finish with your elbow straight.

**Progression and Variations:**
Progress using strength training principles.

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**Strength - elbow - extensors - free weights - seated.**

**Physiotherapist Aim:**
To strengthen the elbow extensors.

**Client Aim:**
To strengthen your triceps.

**Physiotherapist Instructions:**
Position the patient sitting with their shoulder flexed and elbow flexed. Instruct the patient to extend the elbow.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair. Start with your arm above your head and your elbow bent. Finish with your arm above your head and your elbow straight.

**Progression and Variations:**
Progress using strength training principles.

**Precautions:**
1. Ensure that wheelchair does not flip backwards.

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- Spinal Unit, The Prince of Wales Hospital

Strength - elbow - extensors - free weights - supine.

Physiotherapist Aim:
To strengthen the elbow extensors.

Client Aim:
To strengthen your triceps.

Physiotherapist Instructions:
Position the patient in supine. Instruct the patient to begin with the shoulder flexed to 90 degrees and elbow flexed. Instruct the patient to extend the elbow.

Client Instructions:
Position yourself (or have someone position you) on your back. Take your shoulder up to 90 degrees with your elbow bent. Straighten your elbow.

Progression and Variations:
Progress using strength training principles.

Strength - elbow - extensors - theraband - seated.

Physiotherapist Aim:
To strengthen the elbow extensors.

Client Aim:
To strengthen your triceps.

Physiotherapist Instructions:
Position the patient in sitting with their elbow flexed. Adjust the theraband so that the direction of pull opposes elbow extension. Instruct the patient to extend the elbow.

Client Instructions:
Position yourself (or have someone position you) facing the theraband. Adjust the theraband so that the direction of pull is downwards from the ceiling. Start with your elbow bent and tucked in beside your body. Finish with your elbow straight.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
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- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - elbow - extensors - theraband - supine - 1.

Physiotherapist Aim:
To strengthen the elbow extensors.

Client Aim:
To strengthen your triceps.

Physiotherapist Instructions:
Position the patient supine with their elbow flexed. Adjust the theraband so that the direction of pull opposes elbow extension. Instruct the patient to extend the elbow.

Client Instructions:
Position yourself (or have someone position you) on your back. Adjust the theraband so that the direction of pull is from the top of the bed. Start with your arm beside you and your elbow bent. Finish with your elbow straight.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - elbow - extensors - theraband - supine - 2.

Physiotherapist Aim:
To strengthen the elbow extensors.

Client Aim:
To strengthen your triceps.

Physiotherapist Instructions:
Position the patient supine with their elbow flexed. Adjust the theraband so that the direction of pull opposes elbow extension. Instruct the patient to extend the elbow.

Client Instructions:
Position yourself (or have someone position you) on your back. Adjust the theraband so that the direction of pull is from the top of the bed. Start with your arm beside you and your elbow bent. Finish with your elbow straight.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
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- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Physiotherapist Aim:
To strengthen the elbow extensors.

Client Aim:
To strengthen your triceps.

Physiotherapist Instructions:
Position the patient sitting facing the frame of the uppertone with the hands in the stirrups. Instruct the patient to extend their elbow.

Client Instructions:
Position yourself (or have someone position you) facing the frame of the uppertone with your hands in the stirrups. Straighten your elbow.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

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Physiotherapist Aim:
To strengthen the elbow extensors.

Client Aim:
To strengthen your triceps.

Physiotherapist Instructions:
Position the patient sitting facing the pulleys. Adjust the pulley system so that the direction of pull opposes elbow extension. Instruct the patient to extend the elbow.

Client Instructions:
Position yourself (or have someone position you) facing the pulleys. Adjust the pulley so that direction of pull is downwards from the ceiling. Start with your elbow bent and tucked in beside your body. Finish with your elbow straight.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

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Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
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- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - elbow - flexors - free weights - supine.

Physiotherapist Aim:
To strengthen the elbow flexors.

Client Aim:
To strengthen your biceps.

Physiotherapist Instructions:
Position the patient in supine. Instruct the patient to flex the elbow.

Client Instructions:
Position yourself (or have someone position you) on your back. Start with your arm down beside your body. Finish with your hand up near your shoulder. Keep your elbow tucked in beside your body throughout the exercise.

Progression and Variations:
Progress using strength training principles.

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Strength - elbow - flexors - sandbag weights - seated - quadriplegic.

Physiotherapist Aim:
To strengthen the elbow flexors.

Client Aim:
To strengthen your biceps.

Physiotherapist Instructions:
Position the patient sitting with their elbow and shoulder extended. Attach a weight around the wrist. Instruct the patient to flex the elbow.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair. Attach a weight around your wrist. Start with your arm down beside your body. Finish with your hand up near your shoulder. Keep your elbow tucked in beside your body throughout the exercise.

Progression and Variations:
Progress using strength training principles.
Strength - elbow - flexors - theraband - seated.

Physiotherapist Aim:
To strengthen the elbow flexors.

Client Aim:
To strengthen your biceps.

Physiotherapist Instructions:
Position the patient in sitting with their elbow extended. Adjust the theraband so that the direction of pull opposes elbow flexion. Instruct the patient to flex the elbow.

Client Instructions:
Position yourself (or have someone position you) facing the theraband. Adjust the theraband so that the direction of pull is upwards from the floor. Start with your elbow straight. Finish with your elbow bent.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - elbow - flexors - theraband - supine.

Physiotherapist Aim:
To strengthen the elbow flexors.

Client Aim:
To strengthen your biceps.

Physiotherapist Instructions:
Position the patient supine with their elbow extended. Adjust the theraband so that the direction of pull opposes elbow flexion. Instruct the patient to flex the elbow.

Client Instructions:
Position yourself (or have someone position you) on your back. Adjust the theraband so that the direction of pull is from the bottom of the bed. Start with your arm beside your body on the bed. Finish with your elbow bent.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Injury Type
C5 Quadriplegia
C6 Quadriplegia
C7 Quadriplegia
Incomplete
Paraplegic

Difficulty Level
Advanced
Beginner
Intermediate

Equipment Required
Theraband

Exercise Type
Strength

Body Part
Upper arm

Exercise Submitted
Sydney Spinal Units

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - elbow - flexors - wall mounted pulleys - seated - quadriplegic.

Physiotherapist Aim:
To strengthen the elbow flexors.

Client Aim:
To strengthen your biceps.

Physiotherapist Instructions:
Position the patient in sitting facing the pulleys. Adjust the pulley system so that the direction of pull opposes elbow flexion. Apply a wrist strap. Instruct the patient to flex the elbow.

Client Instructions:
Position yourself (or have someone position you) facing the pulleys. Adjust the pulley system so that the direction of pull is upwards from the floor. Apply (or have someone apply) a wrist strap. Start with your elbow straight. Finish with your elbow bent.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - elbow - flexors - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the elbow flexors.

Client Aim:
To strengthen your biceps.

Physiotherapist Instructions:
Position the patient in sitting facing the pulleys. Adjust the pulley system so that the direction of pull opposes elbow flexion. Instruct the patient to flex the elbow.

Client Instructions:
Position yourself (or have someone position you) facing the pulley. Adjust the pulley system so that the direction of pull is upwards from the floor. Start with your elbow straight. Finish with your elbow bent.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.
**Strength - elbow - flexors/extensors - slings - seated.**

**Physiotherapist Aim:**
To strengthen the elbow flexors/extensors.

**Client Aim:**
To strengthen your biceps and triceps.

**Physiotherapist Instructions:**
Position the patient sitting under an overhead cage. Use slings to support their arms in shoulder abduction and elbow flexion. Instruct the patient to flex and extend the elbow.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair. Use slings to support your arms. Start with your arms out to the side of your body and your elbows straight. Finish with your elbows bent.

**Progression and Variations:**
Progress using strength training principles.

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**Strength - elbow - flexors/extensors - slings - sidelying.**

**Physiotherapist Aim:**
To strengthen the elbow flexors/extensors.

**Client Aim:**
To strengthen your biceps and triceps.

**Physiotherapist Instructions:**
Position the patient in sidelying under an overhead cage. Use slings to support their arms in shoulder flexion and elbow extension. Instruct the patient to flex and extend the elbow.

**Client Instructions:**
Position yourself (or have someone position you) in sidelying. Use slings to support your arms. Start with your arm beside your body and your elbow straight. Finish with your elbow bent.

**Progression and Variations:**
Progress using strength training principles.
**Strength - elbow/wrist - elbow flexors and wrist extensors - overhead bar - supine.**

**Physiotherapist Aim:**
To strengthen the wrist extensors and elbow flexors.

**Client Aim:**
To strengthen your biceps and wrist.

**Physiotherapist Instructions:**
Position the patient supine under an overhead bar. Instruct the patient to pull up into a semi-sitting position using the bar. The patient will need to use wrist extension to wedge the bar against the back of their hands.

**Client Instructions:**
Position yourself (or have someone position you) on your back under an overhead bar. Hook your wrist under and around the bar. Practice doing partial sit-ups using the bar.

**Progression and Variations:**

**Less advanced:**
1. Strap the patients’ hands to the bar.
2. Adjust the height of the bar.

**More advanced:**
1. Perform exercise with one arm or place weights around the patient’s trunk.

**Precautions:**
1. Ensure the bar is correctly positioned and not putting the shoulders in too much flexion (ie, not more than 60 degrees).
2. Ensure the bar is adequately padded.

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**Strength - hip - abduction - theraband - standing.**

**Physiotherapist Aim:**
To strengthen the hip abductors.

**Client Aim:**
To strengthen the muscles at the side of your hip.

**Physiotherapist Instructions:**
Position the patient in standing with their hip adducted. Adjust the theraband so that the direction of pull opposes hip abduction. Instruct the patient to abduct the hip.

**Client Instructions:**
Position the patient in standing side on to the theraband. Start with your leg beside your body. Finish with your leg away from your body.

**Progression and Variations:**

**Less advanced:**
1. Downgrade the colour of the theraband.

**More advanced:**
1. Upgrade the colour of the theraband.

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Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
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- Spinal Unit, The Prince of Wales Hospital

Strength - hip - abductors - no weights - sidelying.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient in sidelying. Instruct the patient to abduct the top leg while keeping the knee and hip extended and the foot pointing forwards.

Client Instructions:
Position yourself (or have someone position you) on your side. Start with your top leg resting on the bed. Finish with your leg away from the bed. Keep your knee and hip straight, and your foot pointing forwards throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Strength - hip - abductors - no weights - standing.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient in standing. Instruct the patient to abduct the hip.

Client Instructions:
Position the patient in standing. Start with the leg beside the body. Finish with the leg away from the body.

Progression and Variations:
Progress using strength training principles.
Strength - hip - abductors - no weights - supine.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient in supine. Instruct the patient to abduct the leg whilst keeping the toe pointing upward.

Client Instructions:
Position yourself (or have someone position you) on your back. Start with your leg parallel to your other leg. Finish with your leg out to the side. Keep your toe pointing up.

Progression and Variations:
Progress using strength training principles.

Strength - hip - abductors - sandbag weights - sidelying.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient in sidelying with their knee extended and top hip adducted. Attach a weight around the ankle. Instruct the patient to abduct the top leg while keeping the knee and hip extended and the foot pointing forwards.

Client Instructions:
Position yourself (or have someone position you) on your side with a weight on your ankle. Attach a weight around your ankle. Start with your top leg resting on the bed. Finish with your leg away from the bed. Keep your hip and knee straight, and your foot pointing forwards throughout the exercise.

Progression and Variations:
Progress using strength training principles.
Strength - hip - abductors - sandbag weights - standing.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient in standing. Attach a weight around the ankle. Instruct the patient to abduct the leg.

Client Instructions:
Position yourself in standing with a weight on your foot. Attach a weight around your ankle. Start with the leg beside the body. Finish with the leg away from the body.

Progression and Variations:
Progress using strength training principles.

Strength - hip - abductors - sidestepping - block.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient standing beside a step. Instruct the client to step sideways onto the step.

Client Instructions:
Position yourself beside the step. Step sideways onto the step. Start with your leg beside your body. Finish with your leg away from your body.

Progression and Variations:
Less advanced:
1. Decrease the height of the step.

More advanced:
1. Increase the height of the step.
Strength - hip - abductors - sidestepping supported - elderly.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient in standing with their back against a wall. Instruct the patient to abduct the hip by stepping sideways. Instruct the patient to keep the hip and knee extended and the foot pointing forwards throughout the exercise.

Client Instructions:
Position yourself in standing with your back against the wall. Start with your feet together. Step to the side. Finish with your feet apart. Keep your hip and knee straight and your foot pointing forwards throughout the exercise.

Progression and Variations:
Less advanced:
1. Take smaller steps.

More advanced:
1. Take larger steps.
2. Sidestep unsupported.

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Strength - hip - abductors - sidestepping supported - youth.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient standing with their back against a wall. Instruct the patient to abduct the hip by taking a step to the side, keeping the knee extended and the foot pointing forwards.

Client Instructions:
Position yourself in standing with your back against the wall. Take a step to the side. Keep your knee straight and your foot pointing forwards throughout the exercise.

Progression and Variations:
Less advanced:
1. Take smaller steps.

More advanced:
1. Take larger steps.

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Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - hip - abductors - sidestepping unsupported - elderly.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient in standing. Instruct the patient to abduct the hip and take a step to the side. Instruct the patient to keep the knee and hip extended and their foot pointing forwards throughout the exercise.

Client Instructions:
Position yourself in standing. Start with your feet together. Take your leg away from your body and step to the side. Finish with your feet apart. Keep your knee and hip straight and your foot pointing forwards throughout the exercise.

Progression and Variations:
Less advanced:
1. Take smaller steps.

More advanced:
1. Take larger steps.

Strength - hip - abductors - sidestepping unsupported - youth.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient in standing. Instruct the patient to abduct the hip and take a step sideways, keeping the knee straight and the foot pointing forwards.

Client Instructions:
Position yourself in standing. Keeping your knee straight and your foot pointing forwards, take a step to the side.

Progression and Variations:
Less advanced:
1. Take smaller steps.

More advanced:
1. Take larger steps.
Strength - hip - abductors - theraband - sidelying.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient in sidelying. Adjust the theraband so that the direction of pull opposes hip abduction. Instruct the patient to abduct the top leg while keeping the hip and knee extended and the foot pointing forwards.

Client Instructions:
Position yourself (or have someone position you) lying on your side. Adjust the theraband so that the direction of pull is away from the floor. Start with your top leg resting on the bed. Finish with your leg away from the bed. Keep your knee and hip straight, and your foot pointing forwards throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - hip - abductors - wall mounted pulleys - standing.

Physiotherapist Aim:
To strengthen the hip abductors.

Client Aim:
To strengthen the muscles at the side of your hip.

Physiotherapist Instructions:
Position the patient in standing next to the pulleys. Adjust the pulley system so that the direction of pull opposes hip abduction. Instruct the patient to abduct the hip.

Client Instructions:
Position yourself next to the pulleys. Start with the leg beside the body. Finish with the leg away from the body.

Progression and Variations:
Progress using strength training principles.
Strength - hip - adductors - theraband - sidelying.

Physiotherapist Aim:
To strengthen the hip adductors.

Client Aim:
To strengthen the muscles on the inside of your thigh.

Physiotherapist Instructions:
Position the patient in sidelying under an overhead cage with their hip abducted. Adjust the theraband so that the direction of pull opposes hip adduction. Instruct the patient to adduct the leg.

Client Instructions:
Position yourself (or have someone position you) in sidelying with theraband attached to your ankle. Start with your leg away from your body. Finish with your leg beside your body.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - hip - adductors - theraband - standing.

Physiotherapist Aim:
To strengthen the hip adductors.

Client Aim:
To strengthen the muscles on the inside of your thigh.

Physiotherapist Instructions:
Position the patient in standing. Adjust the theraband so that the direction of pull opposes hip adduction. Instruct the patient to adduct the leg.

Client Instructions:
Position yourself in standing beside the pulley with the leg attached to the pulley. Start with the leg away from the body. Finish with the leg beside the body.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.
Strength - hip - adductors - wall mounted pulleys - standing.

Physiotherapist Aim:
To strengthen the hip adductors.

Client Aim:
To strengthen the muscles on the inside of your thigh.

Physiotherapist Instructions:
Position the patient in standing next to the pulleys. Adjust the pulley system so that the direction of pull opposes hip adduction. Instruct the patient to adduct the leg.

Client Instructions:
Position yourself (or have someone position you) in standing with the pulley attached to the ankle. Start with the leg away from the body. Finish with the leg beside the body.

Progression and Variations:
Progress using strength training principles.

Strength - hip - adductors - weights and pulleys - sidelying.

Physiotherapist Aim:
To strengthen the hip adductors.

Client Aim:
To strengthen the muscles at the inside of your thigh.

Physiotherapist Instructions:
Position the patient in sidelying under an overhead cage. Adjust the pulley so the direction of the pulley opposes hip adduction. Instruct the patient to abduct the top leg while keeping the knee and hip extended and the foot pointing forwards.

Client Instructions:
Position yourself (or have someone position you) on your side. Adjust the pulley so the direction of the pulley is downwards from the attachment. Start with your top leg resting on the bed. Finish with your leg away from the bed. Keep your hip and knee straight, and your foot pointing forwards throughout the exercise.
Strength - hip - extensors - bridging - supine.

Physiotherapist Aim:
To strengthen the hip extensors.

Client Aim:
To strengthen the muscles at the back of your hip.

Physiotherapist Instructions:
Position the patient in crook lying. Instruct the patient to lift their bottom off the bed.

Client Instructions:
Position yourself (or have someone position you) on your back with your knees bent. Lift your bottom off the bed.

Progression and Variations:
Less advanced:
1. Decrease the height of the lift.

More advanced:
1. Sustain the lift.
2. Carry out the exercise using one leg.

Strength - hip - extensors - no weights - prone.

Physiotherapist Aim:
To strengthen the hip extensors.

Client Aim:
To strengthen the muscles at the back of your hip.

Physiotherapist Instructions:
Position the patient in prone. Instruct the patient to extend the hip.

Client Instructions:
Position yourself (or have someone position you) on your stomach. Start with your leg on the bed. Finish with your leg off the bed.

Progression and Variations:
Progress using strength training principles.
Strength - hip - extensors - no weights - sidelying.

Physiotherapist Aim:
To strengthen the hip extensors.

Client Aim:
To strengthen the muscles at the back of your hip.

Physiotherapist Instructions:
Position the patient in sidelying. Instruct the patient to extend the hip.

Client Instructions:
Position yourself (or have someone position you) in sidelying. Start with your foot in front of your hip. Finish with your foot behind your hip.

Progression and Variations:
Progress using strength training principles.

Strength - hip - extensors - sandbag weights - prone.

Physiotherapist Aim:
To strengthen the hip extensors.

Client Aim:
To strengthen the muscles at the back of your hip.

Physiotherapist Instructions:
Position the patient in prone with their hip and knee extended. Attach a weight around the ankle. Instruct the patient to extend the hip.

Client Instructions:
Position yourself (or have someone position you) on your stomach with a weight on your ankle. Start with your leg on the bed. Finish with your leg off the bed.

Progression and Variations:
Progress using strength training principles.
Strength - hip - extensors - single leg - supine.

Physiotherapist Aim:
To strengthen the hip extensors.

Client Aim:
To strengthen the muscles at the back of your hip.

Physiotherapist Instructions:
Position the patient in supine with one leg over the edge of the bed. Position the foot on a stool. Instruct the push down through the foot and extend the hip.

Client Instructions:
Position yourself (or have someone position you) in supine with one leg over the edge of the bed. Position your foot on a stool. Push down through your foot and lift your bottom off the bed.

Progression and Variations:
Less advanced:
1. Increase the height of the stool.

More advanced:
1. Decrease the height of the stool.

Strength - hip - extensors - slideboard - sidelying.

Physiotherapist Aim:
To strengthen the hip extensors.

Client Aim:
To strengthen the muscles at the back of your hip.

Physiotherapist Instructions:
Position the patient in sidelying. Place a slideboard under the patients leg. Instruct the patient to extend the hip.

Client Instructions:
Position yourself (or have someone position you) in sidelying. Start with your foot in front of your hip. Finish with your foot behind your hip. Keep your knee straight.

Progression and Variations:
Progress using strength training principles.
Strength - hip - extensors - theraband - prone.

**Physiotherapist Aim:**
To strengthen the hip extensors.

**Client Aim:**
To strengthen the muscles at the back of your hip.

**Physiotherapist Instructions:**
Position the patient in prone with their hip and knee extended. Adjust the theraband so that the direction of pull opposes hip extension. Instruct the patient to extend the hip.

**Client Instructions:**
Position yourself (or have someone position you) on your stomach with your ankle attached to the theraband. Lift your whole leg off the bed. Start with your leg on the bed. Finish with your leg off the bed.

**Progression and Variations:**
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

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Strength - hip - extensors - wall mounted pulleys - prone.

**Physiotherapist Aim:**
To strengthen the hip extensors.

**Client Aim:**
To strengthen the muscles at the back of your hip.

**Physiotherapist Instructions:**
Position the patient in prone facing away from the pulleys. Adjust the pulley system so that the direction of pull opposes hip extension. Instruct the patient to extend the hip.

**Client Instructions:**
Position yourself (or have someone position you) on your stomach with your ankle attached to the pulley. Lift your whole leg off the bed. Start with your leg on the bed. Finish with your leg off the bed.

**Progression and Variations:**
Progress using strength training principles.
Strength - hip - external rotators - no weights - seated.

Physiotherapist Aim:
To strengthen the hip external rotators.

Client Aim:
To strengthen your hip muscles.

Physiotherapist Instructions:
Position the patient in sitting. Instruct the patient to externally rotate the hip.

Client Instructions:
Position the patient in sitting. Instruct the patient to rotate the hip towards the other leg so that their foot is closer to the calf.

Progression and Variations:
Progress using strength training principles.

Strength - hip - external rotators - sandbag weights - seated.

Physiotherapist Aim:
To strengthen the hip external rotators.

Client Aim:
To strengthen your hip muscles.

Physiotherapist Instructions:
Position the patient in sitting with their legs over the side of the bed. Instruct the patient to externally rotate the hip.

Client Instructions:
Position yourself (or have someone position you) in sitting with your feet over side of bed. Attach a weight around your ankle. Start with your legs apart. Finish with your feet together. Keep your thighs apart throughout the exercise.

Progression and Variations:
Progress using strength training principles.

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Strength - hip - external rotators - theraband - seated.

Physiotherapist Aim:
To strengthen the hip external rotators.

Client Aim:
To strengthen your hip muscles.

Physiotherapist Instructions:
Position the patient in sitting with their legs over the side of bed. Adjust the theraband so that the direction of pull opposes hip external rotation. Instruct the patient to externally rotate the hip.

Client Instructions:
Position yourself (or have someone position you) in sitting with your feet over the side of the bed. Adjust the theraband so that the direction of pull is towards your opposite leg. Start with your legs apart. Finish with your feet together by rotating your hip. Keep your thighs apart throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - hip - external rotators - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the hip external rotators.

Client Aim:
To strengthen your hip muscles.

Physiotherapist Instructions:
Position the patient in sitting perpendicular to the pulleys. Adjust the pulley system so that the direction of pull opposes hip external rotation. Instruct the patient to externally rotate the hip.

Client Instructions:
Position yourself (or have someone position you) in sitting with your feet over side of bed. Adjust the pulley system so that the direction of pull is toward your opposite leg. Start with your legs apart. Finish with your feet together. Keep your thighs apart throughout the exercise.

Progression and Variations:
Progress using strength training principles.
Strength - hip - flexors - free weights - supine.

Physiotherapist Aim:
To strengthen the hip flexors.

Client Aim:
To strengthen the muscles at the front of your hip.

Physiotherapist Instructions:
Position the patient in supine with a weight on the ankle. Instruct the patient to flex the hip.

Client Instructions:
Position yourself (or have someone position you) on your back with the weight around the ankle. Start with your hip straight. Finish with your hip bent.

Strength - hip - flexors - no weights - standing.

Physiotherapist Aim:
To strengthen the hip flexors.

Client Aim:
To strengthen the muscles at the front of your hip.

Physiotherapist Instructions:
Position the patient in standing. Instruct the patient to flex the hip.

Client Instructions:
Position yourself in standing. Start with your hip straight. Finish with your hip bent.

Progression and Variations:
Progress using strength training principles.
Strength - hip - flexors - no weights - supine - 1.

Physiotherapist Aim:
To strengthen the hip flexors.

Client Aim:
To strengthen the muscles at the front of your hip.

Physiotherapist Instructions:
Position the patient in supine. Instruct the patient to flex the hip.

Client Instructions:
Position yourself (or have someone position you) on your back. Start with your knee straight. Finish with your knee bent.

Progression and Variations:
Progress using strength training principles.

Strength - hip - flexors - no weights - supine - 2.

Physiotherapist Aim:
To strengthen the hip flexors.

Client Aim:
To strengthen the muscles at the front of your hip.

Physiotherapist Instructions:
Position the patient in supine. Instruct the patient to flex the hip.

Client Instructions:
Position yourself (or have someone position you) on your back. Start with your hip straight. Finish with your hip bent.

Progression and Variations:
Progress using strength training principles.
Strength - hip - flexors - sandbag weights - standing.

Physiotherapist Aim:
To strengthen the hip flexors.

Client Aim:
To strengthen the muscles at the front of your hip.

Physiotherapist Instructions:
Position the patient in standing. Attach a weigth around the ankle. Instruct the patient to flex the hip.

Client Instructions:
Position yourself in standing. Start with your hip straight. Finish with your hip bent.

Progression and Variations:
Progress using strength training principles.

Strength - hip - flexors - theraband - standing.

Physiotherapist Aim:
To strengthen the hip flexors.

Client Aim:
To strengthen the muscles at the front of your hip.

Physiotherapist Instructions:
Position the patient in standing with their hip and knee extended. Adjust the theraband so the direction of pull opposes hip flexion. Instruct the patient to flex the hip.

Client Instructions:
Position yourself in standing facing away from the theraband. Adjust the theraband so the direction of pull is upwards from the floor. Start with your hip straight. Finish with your hip bent.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.
Strength - hip - flexors - theraband - supine.

Physiotherapist Aim:
To strengthen the hip flexors.

Client Aim:
To strengthen the muscles at the front of your hip.

Physiotherapist Instructions:
Position the patient in supine with their hip and knee extended. Adjust the theraband so the direction of pull opposes hip flexion. Instruct the patient to flex the hip.

Client Instructions:
Position yourself (or have someone position you) on your back with the theraband attached to the ankle. Start with your hip straight. Finish with your hip bent.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - hip - flexors - wall mounted pulleys - standing.

Physiotherapist Aim:
To strengthen the hip flexors.

Client Aim:
To strengthen the muscles at the front of your hip.

Physiotherapist Instructions:
Position the patient in standing facing away from the pulleys. Adjust the pulley system so the direction of pull opposes hip flexion. Instruct the patient to flex the hip.

Client Instructions:
Position yourself in standing facing away from the pulley. Adjust the pulley so the direction of pull is upwards from the floor. Start with your hip straight. Finish with your hip bent.

Progression and Variations:
Progress using strength training principles.

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**Strength - hip - flexors - wall mounted pulleys - supine.**

**Physiotherapist Aim:**
To strengthen the hip flexors.

**Client Aim:**
To strengthen the muscles at the front of your hip.

**Physiotherapist Instructions:**
Position the patient in supine facing away from the pulleys. Adjust the pulley system so that the direction of pull opposes hip flexion. Instruct the patient to flex the hip.

**Client Instructions:**
Position yourself (or have someone position you) on your back with the pulley attached to the ankle. Start with your hip straight. Finish with your hip bent.

**Progression and Variations:**
Progress using strength training principles.

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**Strength - hip - internal rotators - sandbag weights - seated.**

**Physiotherapist Aim:**
To strengthen the hip internal rotators.

**Client Aim:**
To strengthen your hip muscles.

**Physiotherapist Instructions:**
Position the patient in sitting with their legs over the side of the bed. Instruct the patient to internally rotate the hip.

**Client Instructions:**
Position yourself (or have someone position you) in sitting with your legs over the side of the bed. Attach a weight around your ankle. Start with your feet together. Finish with your feet apart by rotating your hip.

**Progression and Variations:**
Progress using strength training principles.
Strength - hip - internal rotators - seated.

Physiotherapist Aim:
To strengthen the hip internal rotators.

Client Aim:
To strengthen your hip muscles.

Physiotherapist Instructions:
Position the patient in sitting with legs over the side of the bed. Instruct the patient to internally rotate the hip.

Client Instructions:
Position yourself (or have someone position you) in sitting with your legs over the side of the bed. Take your foot out to the side by rotating at the hip.

Strength - hip - internal rotators - theraband - seated.

Physiotherapist Aim:
To strengthen the hip internal rotators.

Client Aim:
To strengthen your hip muscles.

Physiotherapist Instructions:
Place the patient in sitting with their legs over side of the bed. Adjust the theraband so that the direction of pull opposes hip internal rotation. Instruct the patient to internally rotate the hip.

Client Instructions:
Position yourself (or have someone position you) in sitting with your legs over the side of the bed. Adjust the theraband so that the line of pull is in line with your ankle. Start with your feet together. Finish with your feet apart by rotating your hip.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.
Strength - hip - internal rotators - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the hip internal rotators.

Client Aim:
To strengthen your hip muscles.

Physiotherapist Instructions:
Position the patient in sitting perpendicular to the pulleys. Adjust the pulley system so that the direction of pull opposes hip internal rotation. Instruct the patient to internally rotate the hip.

Client Instructions:
Position yourself (or have someone position you) in sitting with your legs over the side of the bed. Adjust the pulley system so that the direction of pull is sideways away from your opposite leg. Start with your feet together. Finish with your feet apart by rotating at the hip.

Progression and Variations:
Progress using strength training principles.

Strength - knee - extensors - bilateral squat - standing.

Physiotherapist Aim:
To strengthen the knee extensors.

Client Aim:
To strengthen the muscles at the front of your thigh.

Physiotherapist Instructions:
Position the patient in standing. Instruct the patient to flex their knees. Instruct the patient to extend the knees.

Client Instructions:
Position yourself in standing. Start with your knees straight. Bend your knees. Finish with your knees straight.

Progression and Variations:
Progress using strength training principles.
Strength - knee - extensors - bilateral squat - tilt table.

Physiotherapist Aim:
To strengthen the knee extensors.

Client Aim:
To strengthen the muscles at the front of your thighs.

Physiotherapist Instructions:
Position the patient on the sliding tilt table. Instruct the patient to flex then extend the knees.

Client Instructions:
Position yourself (or have someone position you) on the tilt table. Start with your knees straght. Bend your knees. Finish with your knees straight.

Progression and Variations:
Less Advanced:
1. Decrease the angle of the tilt table.

More advanced:
1. Increase the angle of the tilt table.

Strength - knee - extensors - no weights - supine.

Physiotherapist Aim:
To strengthen the knee extensors.

Client Aim:
To strengthen the muscles at the front of your thigh.

Physiotherapist Instructions:
Position the patient in supine or long sitting with a rolled towel under the knee. Instruct the patient to extend the knee.

Client Instructions:
Position yourself (or have someone position you) in supine or long sitting with a rolled towel under your knee. Start with your knee bent. Finish with your knee straight.

Progression and Variations:
Progress using strength training principles.
Strength - knee - extensors - sandbag weights - seated - 1.

Physiotherapist Aim:
To strengthen the knee extensors.

Client Aim:
To strengthen the muscles at the front of your thigh.

Physiotherapist Instructions:
Position the patient in sitting with their legs over the side of the bed. Attach a weight around the ankle. Instruct the patient to extend the knee.

Client Instructions:
Position yourself in sitting. Attach a weight around your ankle. Start with your knee bent. Finish with your knee straight.

Progression and Variations:
Progress using strength training principles.

Injury Type
Incomplete

Difficulty Level
Advanced
Beginner
Intermediate

Equipment Required
Sandbag weights

Exercise Type
Strength

Body Part
Upper leg

Exercise Submitted
Sydney Spinal Units


Physiotherapist Aim:
To strengthen the knee extensors.

Client Aim:
To strengthen the muscles at the front of your thigh.

Physiotherapist Instructions:
Position the patient in supine or longsitting with a rolled up towel under the knee. Attach a weight around the ankle. Instruct the patient to extend the knee.

Client Instructions:
Position yourself on your back or in long sitting with a rolled up towel under your knee. Attach a weight around your ankle. Start with your knee bent. Finish with your knee straight.

Progression and Variations:
Progress using strength training principles.

Injury Type
Incomplete

Difficulty Level
Advanced
Beginner
Intermediate

Equipment Required
Free weights

Exercise Type
Strength

Body Part
Upper leg

Exercise Submitted
Sydney Spinal Units

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Strength - knee - extensors - stepping - block.

Physiotherapist Aim:
To strengthen the knee extensors.

Client Aim:
To strengthen the muscles at the front of your thigh.

Physiotherapist Instructions:
Position the patient in standing behind a step. Instruct the patient to step up onto the step.

Client Instructions:
Position yourself behind a step. Step up onto the step.

Progression and Variations:
Less advanced:
1. Decrease the height of the step.

More advanced:
1. Increase the height of the step.

Strength - knee - extensors - unilateral squat - standing.

Physiotherapist Aim:
To strengthen the knee extensors.

Client Aim:
To strengthen the muscles at the front of your thigh.

Physiotherapist Instructions:
Position the patient standing on one leg. Instruct the patient to flex, then extend the knee.

Client Instructions:
Position yourself standing on one leg. Start with your knee straight. Bend your knee. Finish with your knee straight.

Progression and Variations:
Progress using strength training principles.
Strength - knee - flexors - no weights - prone - 1.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in prone. Instruct the patient to flex the knee.

Client Instructions:
Position yourself (or have someone position you) on your stomach. Start with your knee straight. Finish with your knee bent.

Progression and Variations:
Progress using strength training principles.

Strength - knee - flexors - no weights - prone - 2.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in prone. Instruct the patient to flex the knee.

Client Instructions:
Position yourself (or have someone position you) on your stomach. Start with your knee straight. Finish with your knee bent.

Progression and Variations:
Progress using strength training principles.
Strength - knee - flexors - no weights - standing - 1.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in standing. Instruct the patient to flex the knee while keeping the hip extended.

Client Instructions:
Position yourself in standing. Place one foot behind the other. Bend your knee while keeping your hip straight.

Progression and Variations:
Progress using strength training principles.

Strength - knee - flexors - no weights - standing - 2.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in standing. Instruct the patient to flex the knee while keeping the hip extended.

Client Instructions:
Position yourself in standing with one foot behind the other. Keep your hip straight. Start with your knee straight. Finish with your knee bent.

Progression and Variations:
Progress using strength training principles.
Strength - knee - flexors - sandbag weights - prone
- 1.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in prone with their hip and knee extended. Attach a weight around the ankle. Instruct the patient to flex the knee.

Client Instructions:
Position yourself (or have someone position you) on your stomach. Attach a weight around your ankle. Start with your knee straight. Finish with your knee bent.

Progression and Variations:
Progress using strength training principles.

Strength - knee - flexors - sandbag weights - prone
- 2.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in prone with their hip and knee extended. Attach a weight around the ankle. Instruct the patient to flex the knee 30 degrees.

Client Instructions:
Position yourself (or have someone position you) on your stomach. Attach a weight around your ankle. Start with your knee straight. Finish with your knee bent. Bend your knee a small amount only.

Progression and Variations:
Progress using strength training principles.
Strength - knee - flexors - sandbag weights - standing.

**Physiotherapist Aim:**
To strengthen the knee flexors.

**Client Aim:**
To strengthen the muscles at the back of your thigh.

**Physiotherapist Instructions:**
Position the patient in standing. Attach a weight around the ankle. Instruct the patient to flex the knee while keeping the hip extended.

**Client Instructions:**
Position yourself in standing. Attach a weight around your ankle. Place one foot behind the other. Bend your knee while keeping your hip straight.

**Progression and Variations:**
Progress using strength training principles.

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Strength - knee - flexors - seated walking.

**Physiotherapist Aim:**
To strengthen the knee flexors.

**Client Aim:**
To strengthen the muscles at the back of your thigh.

**Physiotherapist Instructions:**
Position the patient in sitting on a seat with wheels. Instruct the patient to walk the seat across the room.

**Client Instructions:**
Position yourself (or have someone position you) in sitting on a seat with wheels. Start with one leg in front of the other and your both feet on the ground. Finish with your feet together by bending your knee and moving the seat forward.

**Precautions:**
Ensure the stool does not tip.
Strength - knee - flexors - slideboard - seated.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in sitting. Instruct the patient to flex and extend the knee whilst keeping the foot on the floor.

Client Instructions:
Position yourself in sitting. Start with your foot in front of your knee. Finish with your foot behind your knee. Keep your foot on the floor.

Progression and Variations:
Less advanced:
1. Place a towel or slidesheet under the foot.
2. Decrease the range of the movement.

More advanced:
1. Place a shoe on the foot.
2. Increase the range of the movement.

Strength - knee - flexors - theraband - prone.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in prone with their knee extended. Adjust the theraband so that the direction of pull opposes knee flexion. Instruct the patient to flex the knee.

Client Instructions:
Position yourself (or have someone position you) lying on your stomach. Adjust the theraband so that the direction of pull is towards the top of the bed. Start with your knee straight and leg resting on the bed. Finish with your knee bent.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.
Strength - knee - flexors - theraband - standing.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in standing with their knee extended. Attach the theraband to that the line of pull opposes knee flexion. Instruct the patient to flex the knee while maintaining hip extension.

Client Instructions:
Position yourself (or have someone position you) in standing facing the theraband. Attach the theraband to your ankle. Keep your hip straight. Start with your knee straight. Finish with your knee bent.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - knee - flexors - wall mounted pulleys - prone.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in prone facing away from the pulleys. Adjust the pulley system so that the line of pull opposes knee flexion. Instruct the patient to flex the knee.

Client Instructions:
Position yourself (or have someone position you) lying on your stomach. Adjust the pulley system so that the line of pull is towards the top of the bed. Start with your knee straight and leg resting on the bed. Finish with your knee bent.

Progression and Variations:
Progress using strength training principles.
Strength - knee - flexors - wall mounted pulleys - standing.

Physiotherapist Aim:
To strengthen the knee flexors.

Client Aim:
To strengthen the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in standing facing the pulleys. Adjust the pulley system so that the direction of pull opposes knee flexion. Instruct the patient to flex the knee while keeping the hip extended.

Client Instructions:
Position yourself (or have someone position you) in standing with one foot behind the other. Attach the pulley to your ankle. Keep your hip straight. Start with your knee straight. Finish with your knee bent.

Strength - knee - flexors/extensors - slideboard - sidelying.

Physiotherapist Aim:
To strengthen the knee flexors/extensors.

Client Aim:
To strengthen the muscles at the back and front of your thigh.

Physiotherapist Instructions:
Position the patient in sidelying. Use pillows and a slideboard to support the leg. Instruct the patient to flex and extend the knee.

Client Instructions:
Position yourself (or have someone position you) in sidelying. Use pillows and a slideboard to support your leg. Bend and straighten your knee.

Progression and Variations:
Less advanced:
1. Alter the angle of the slideboard.
2. Place a slidesheet on the slideboard.

More advanced:
1. Alter the angle of the slideboard.
Strength - neck - protractors - isometric - seated.

Physiotherapist Aim:
To strengthen the neck protractors.

Client Aim:
To strengthen the muscles at the front of your neck.

Physiotherapist Instructions:
Position your hand on the patient’s forehead. Instruct the patient to protract the neck. Apply resistance.

Client Instructions:
Instruct someone to position their hand on your forehead. Push your forehead into the person’s hand.

Precautions:
1. Acute neck injury.

Strength - neck - retractors - isometric - seated.

Physiotherapist Aim:
To strengthen the neck retractors.

Client Aim:
To strengthen the muscles at the back of your neck.

Physiotherapist Instructions:
Position your hand behind the patient’s head. Instruct the patient to retract the neck. Apply resistance.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair. Instruct a carer to apply gentle force behind your head whilst you try to tuck your chin in and pull your head backwards.

Precautions:
1. Acute neck injury.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - shoulder - ab/adductors - slings - seated.

Physiotherapist Aim:
To strengthen the shoulder ab/adductors.

Client Aim:
To strengthen the muscles at the front and back of your shoulders.

Physiotherapist Instructions:
Position the patient in their wheelchair. Use slings to support the arms in shoulder abduction and elbow extension. Instruct the patient to horizontally adduct and abduct the shoulder.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair. Use slings to support your arms. Start with your arms in front of your body. Finish with your arms out to the side.

Progression and Variations:
Progress using strength training principles.

Strength - shoulder - abductors - free weights - prone.

Physiotherapist Aim:
To strengthen the shoulder horizontal abductors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient prone with the arm over the edge of the bed and the shoulder horizontally adducted. Instruct the patient to horizontally abduct the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) on your stomach with your arm over the edge of the bed. Start with your arm pointed down towards the floor. Finish with your arm out to the side. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.
Strength - shoulder - abductors - free weights - seated.

Physiotherapist Aim:
To strengthen the shoulder abductors.

Client Aim:
To strengthen the muscles at the side and top of your shoulder.

Physiotherapist Instructions:
Position the patient in their wheelchair with their shoulder adducted. Instruct the patient to abduct the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair. Start with your arm down beside your body. Finish with your arm above your head. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - shoulder - abductors - sandbag weights - seated - quadriplegic.

Physiotherapist Aim:
To strengthen the shoulder abductors.

Client Aim:
To strengthen the muscles at the side and top of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting with their elbow extended and shoulder adducted. Attach a weight around the wrist. Apply an elbow splint. Instruct the patient to abduct the shoulder.

Client Instructions:
Position yourself (or have yourself positioned) in sitting. Attach (or have someone attach) a weight around your wrist. Apply (or have someone apply) an elbow splint. Start with your arm beside your body. Finish with your arm away from your body. Keep your elbow straight.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure the patient does not fall sideways out of the wheelchair.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - shoulder - abductors - sandbag weights - supine.

Physiotherapist Aim:
To strengthen the shoulder abductors.

Client Aim:
To strengthen the muscles at the side and top of your shoulder.

Physiotherapist Instructions:
Position the patient in supine with the shoulder adducted. Attach a weight around the wrist. Instruct the patient to abduct the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) on your back. Attach (or have someone attach) a weight around your wrist. Start with your arm down beside your body. Finish with your arm above your head. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Strength - shoulder - abductors - theraband - seated.

Physiotherapist Aim:
To strengthen the shoulder abductors.

Client Aim:
To strengthen the muscles at the side and top of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder adducted. Adjust the theraband so that the line of pull opposes shoulder adduction. Instruct the patient to abduct the shoulder while maintaining elbow extension.

Client Instructions:
Position yourself (or have someone position you) side-on to the theraband. Adjust the theraband so that the direction of pull is upwards from the floor. Start with your arm beside your body. Finish with your arm out to the side. Keep your elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - shoulder - abductors - theraband - supine.

Physiotherapist Aim:
To strengthen the shoulder abductors.

Client Aim:
To strengthen the muscles at the side and top of your shoulder.

Physiotherapist Instructions:
Position the patient supine with their shoulder adducted. Adjust the theraband so that the direction of pull opposes shoulder abduction. Instruct the patient to abduct the shoulder while maintaining elbow extension.

Client Instructions:
Position yourself (or have someone position you) on your back. Adjust the theraband so that the direction of pull is from the bottom of the bed. Start with your arm beside your body. Finish with you arm away from your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - shoulder - abductors - upper tone - seated.

Physiotherapist Aim:
To strengthen the shoulder abductors.

Client Aim:
To strengthen the muscles at the side and top of your shoulder.

Physiotherapist Instructions:
Position the patient facing the frame of the uppertone with their elbows under the abductor pads. Instruct the patient to abduct the shoulders.

Client Instructions:
Position yourself (or have someone position you) facing the frame of the uppertone with your elbows under the pads. Start with your elbows tucked in beside your body. Finish with you arms out from your body.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - shoulder - abductors - wall mounted pulleys - seated - quadriplegic.

Physiotherapist Aim:
To strengthen the shoulder abductors.

Client Aim:
To strengthen the muscles at the side and top of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting perpendicular to the pulleys. Adjust the pulley so that the direction of pull opposes shoulder abduction. Apply an elbow splint and wrist strap. Instruct the patient to abduct the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) side-on to the pulley. Adjust the pulley so that the direction of pull is upwards from the floor. Apply (or have someone apply) an elbow splint and wrist strap. Start with your arm beside your body. Finish with your arm out to the side. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - shoulder - abductors - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the shoulder abductors.

Client Aim:
To strengthen the muscles at the side and top of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting perpendicular to the pulleys. Adjust the pulley so that the direction of pull opposes shoulder abduction. Instruct the patient to abduct the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) side-on to the pulley. Adjust the pulley so that the direction of pull is upwards from the floor. Start with your arm beside your body. Finish with your arm out to the side. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.
Strength - shoulder - adductors - theraband - seated.

Physiotherapist Aim:
To strengthen the shoulder adductors.

Client Aim:
To strengthen the muscles in the front of your chest.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder abducted. Adjust the theraband so that the direction of pull opposes shoulder adduction. Instruct the patient to adduct the shoulder while maintaining elbow extension.

Client Instructions:
Position yourself (or have someone position you) side-on to the theraband. Adjust the theraband so that the direction of pull is downwards from the ceiling. Start with your arm out to the side. Finish with your arm beside your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - shoulder - adductors - theraband - supine.

Physiotherapist Aim:
To strengthen the shoulder adductors.

Client Aim:
To strengthen the muscles in the front of your chest.

Physiotherapist Instructions:
Position the patient supine on the bed with their shoulder abducted. Adjust the theraband so that the direction of pull opposes shoulder adduction. Instruct the patient to adduct the shoulder while maintaining elbow extension.

Client Instructions:
Position yourself (or have someone position you) on your back. Adjust the theraband so that the direction of pull is from the top of the bed. Start with your arm away from your body and your elbow straight. Finish with your arm beside your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - shoulder - adductors - upper tone - seated.

Physiotherapist Aim:
To strengthen the shoulder adductors.

Client Aim:
To strengthen the muscles in the front of your chest.

Physiotherapist Instructions:
Position the patient facing the frame of the uppertone with their elbows on the adductor pads. Instruct the patient to adduct the shoulders.

Client Instructions:
Position yourself (or have someone position you) facing the frame of the uppertone with your elbows on the pads. Start with your arms out from your body. Finish with your elbows tucked in beside your body.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - shoulder - adductors - wall mounted pulleys - seated - quadriplegic.

Physiotherapist Aim:
To strengthen the shoulder adductors.

Client Aim:
To strengthen the muscles in the front of your chest.

Physiotherapist Instructions:
Position the patient in sitting perpendicular to the pulleys. Adjust the pulley system so that the direction of pull opposes shoulder adduction. Apply an elbow splint and wrist strap. Instruct the patient to adduct the shoulder.

Client Instructions:
Position yourself (or have someone position you) side-on to the pulleys. Adjust the pulley system so that the direction of pull is downwards from the ceiling. Apply (or have someone apply) an elbow splint and wrist strap. Start with your arm out to the side. Finish with your arm beside your body.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - shoulder - adductors - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the shoulder adductors.

Client Aim:
To strengthen the muscles in the front of your chest.

Physiotherapist Instructions:
Position the patient in sitting perpendicular to the pulleys. Adjust the pulley system so that the direction of pull opposes shoulder adduction. Instruct the patient to adduct the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) side-on to the pulley. Adjust the pulley system so that the direction of pull is downwards from the ceiling. Start with your arm out to the side. Finish with your arm beside your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - shoulder - adductors/flexors - upper tone - seated.

Physiotherapist Aim:
To strengthen the shoulder adductors and flexors.

Client Aim:
To strengthen the muscles in the front of your chest and shoulder.

Physiotherapist Instructions:
Position the patient facing away from the frame of the uppertone with their hands wedged in the uppertone handles. Instruct the patient to flex the shoulders and extend the elbows.

Client Instructions:
Position yourself (or have someone position you) facing away from the frame of the uppertone with your hands wedged in the uppertone handles. Start with your hands to the side of your chest. Finish with your arm arms out straight in front of you.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.
Strength - shoulder - ball - prone.

Physiotherapist Aim:
To strengthen the triceps and shoulder adductors.

Client Aim:
To strengthen your triceps and shoulder muscles.

Physiotherapist Instructions:
Position the patient prone with a large ball under their hips. Instruct the patient to do push-ups through their hands.

Client Instructions:
Position yourself (or have someone position you) over a large ball, on your stomach. Practice doing push-ups through your hands.

Progression and Variations:
Less advanced:
1. Practice doing push ups on a plinth.

More advanced:
1. Change the size of the ball.

Strength - shoulder - depressors - slings - seated.

Physiotherapist Aim:
To strengthen the shoulder depressors.

Client Aim:
To strengthen the muscles that lower your shoulder girdle.

Physiotherapist Instructions:
Position the patient in their wheelchair under an overhead cage. Place slings under their elbows and attached to an overhead cage. Instruct the patient to depress the shoulders.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair under an overhead cage. Place slings under your elbows and attached to an overhead cage. Start with your shoulders elevated. Finish with your shoulders lowered.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.
Strength - shoulder - depressors - uppertone - seated.

Physiotherapist Aim:
To strengthen the shoulder depressors.

Client Aim:
To strengthen the muscles that lower your shoulder girdle.

Physiotherapist Instructions:
Position the patient facing the uppertone machine with their hands in the slings. Instruct the patient to depress their shoulders whilst keeping their elbows extended.

Client Instructions:
Position yourself (or have someone position you) facing the uppertone machine with your hands in the slings. Start with your shoulder raised. Finish with your shoulders lowered. Keep your elbows straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - shoulder - extensors - free weights - seated.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient in their wheelchair with their arm beside their body. Instruct the patient to extend the shoulder.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair. Start with your arm beside your body. Finish with your arm behind your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.
Strength - shoulder - extensors - sandbag weights - seated -quadriplegic.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position patient in sitting with their elbow and shoulder extended. Attach a weight around the wrist. Apply an elbow splint. Instruct patient to extend shoulder keeping the elbow extended throughout.

Client Instructions:
Position yourself (or have someone position you) in sitting. Attach (or have someone attach) a weight around your wrist. Apply (or have someone apply) an elbow splint. Start with your arm beside your. Finish with your arm behind your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Strength - shoulder - extensors - theraband - from 90 - seated.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder flexed. Adjust the theraband so that the direction of pull opposes shoulder extension. Instruct the patient to extend the shoulder while maintaining elbow extension.

Client Instructions:
Position yourself (or have someone position you) facing the theraband. Adjust the theraband so that the direction of pull is downwards from the ceiling. Start with your arm out in front of you. Finish with your arm down beside your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - shoulder - extensors - theraband - seated - 1.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder flexed. Adjust the theraband so that the direction of pull opposes shoulder extension. Instruct the patient to extend the shoulder and flex the elbow.

Client Instructions:
Position yourself (or have someone position you) facing the theraband. Adjust the theraband so that the direction of pull is aligned with your shoulder. Start with your arm out in front of you. Finish with your elbow bent and tucked in beside your body.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - shoulder - extensors - theraband - seated - 2.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder flexed. Adjust the theraband so that the direction of pull opposes shoulder extension. Instruct the patient to extend the shoulder while maintaining elbow extension.

Client Instructions:
Position yourself (or have someone position you) facing away from the theraband. Adjust the theraband so that the direction of pull is downwards from the ceiling. Start with your arm in front of your body. Finish with your arm down beside your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Precautions:
1. Ensure that wheelchair does not flip backwards.
Strength - shoulder - extensors - theraband - supine.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient supine with their shoulder flexed. Adjust the theraband so that the direction of pull opposes shoulder extension. Instruct the patient to extend the shoulder.

Client Instructions:
Position yourself (or have someone position you) on your back. Adjust the theraband so that the direction of pull is from the top of the bed. Start with your arm above your head and your elbow straight. Finish with your arm beside your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - shoulder - extensors - upper-tone - seated.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient facing the frame of the uppertone with their hands wedged in the uppertone handles. Instruct the patient to extend the shoulders.

Client Instructions:
Position yourself (or have someone position you) facing the frame of the uppertone with your hands wedged in the uppertone handles. Start with your arms out straight in front of you. Finish with your elbows tucked beside your body.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.
Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting facing the pulleys. Adjust the pulley system so that the direction of pull opposes shoulder extension. Instruct the patient to extend the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) facing the pulleys. Adjust the pulley system so that the direction of pull is in alignment with the height of your shoulder. Start with your arm out in front of you. Finish with you arm beside your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - shoulder - extensors - wall mounted pulleys - elbow flexed - seated.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting facing the pulleys. Adjust the pulley system so that the direction of pull opposes shoulder extension. Instruct the patient to extend the shoulder and flex the elbow.

Client Instructions:
Position yourself (or have someone position you) facing the pulleys. Adjust the pulley system so that the direction of pull is in alignment with the height of your elbow. Start with your arm out in front of you and your elbow straight. Finish with your elbow tucked beside your body and your elbow bent.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.
Strength - shoulder - extensors - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting facing away from the pulleys. Adjust the pulley system so that the direction of pull opposes shoulder extension. Instruct the patient to extend the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) facing away from the pulley. Adjust the pulley so that the direction of pull is downwards from the ceiling. Start with your arm in front of your body. Finish with your arm down beside your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - shoulder - extensors - wall mounted pulleys - seated - quadriplegic.

Physiotherapist Aim:
To strengthen the shoulder extensors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting facing the pulleys. Adjust the pulley system so that the direction of pull opposes shoulder extension. Apply an elbow splint and wrist strap. Instruct the patient to extend the shoulder.

Client Instructions:
Position yourself (or have someone position you) facing the pulleys. Adjust the pulley system so that the direction of pull is aligned with your shoulder. Apply (or have someone apply) an elbow splint and wrist strap. Start with your arm out in front of you. Finish with your elbow in beside your body.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

**Strength - shoulder - extensors/assisted flexion - pulley - seated.**

**Physiotherapist Aim:**
To strengthen the shoulder extensors.

**Client Aim:**
To strengthen the muscles at the back of your shoulder.

**Physiotherapist Instructions:**
Position the patient in sitting under an overhead cage. Apply an air splint to support the elbow in extension. Adjust the pulley so that the direction of pull opposes shoulder extension. Instruct the patient to extend the shoulder.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair. Adjust the pulley so that the direction of pull is downwards from the ceiling. Apply (or have someone apply) an air splint to keep your elbow straight. Start with your arm in front of your body. Finish with your arm beside your body.

**Progression and Variations:**
Progress using strength training principles.

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**Strength - shoulder - extensors/flexors - free weights - prone.**

**Physiotherapist Aim:**
To strengthen the shoulder flexors/extensors.

**Client Aim:**
To strengthen the muscles at the front and back of your shoulder.

**Physiotherapist Instructions:**
Position the patient prone with the arm over the edge of the bed and the shoulder flexed. Instruct the patient to extend the shoulder with the elbow extended.

**Client Instructions:**
Position yourself (or have someone position you) on your stomach with your arm over the edge of the bed. Start with your arm above your head. Finish with your arm beside your body. Keep your elbow straight throughout the exercise.

**Progression and Variations:**
Progress using strength training principles.

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Injury Type
- C5 Quadriplegia
- C6 Quadriplegia
- C7 Quadriplegia
- Incomplete

Difficulty Level
- Advanced
- Beginner
- Intermediate

Equipment Required
- Miscellaneous

Exercise Type
- Strength

Body Part
- Upper arm

Exercise Submitted
- Sydney Spinal Units

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Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

**Strength - shoulder - external rotators - free weights - prone.**

**Physiotherapist Aim:**
To strengthen the shoulder external rotators.

**Client Aim:**
To strengthen your shoulder muscles.

**Physiotherapist Instructions:**
Position the patient in prone with the upper arm supported on the bed. Instruct the patient to internally rotate the shoulder.

**Client Instructions:**
Position yourself in prone. Slowly lower your palm towards the floor.

**Progression and Variations:**
Progress using strength training principles.

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**Strength - shoulder - external rotators - free weights - seated - 1.**

**Physiotherapist Aim:**
To strengthen the shoulder external rotators.

**Client Aim:**
To strengthen your shoulder muscles.

**Physiotherapist Instructions:**
Position the patient in their wheelchair with their shoulder abducted and elbow flexed. Instruct the patient to externally rotate the shoulder.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair with your arm out to the side and your elbow bent. Start with your hand pointing towards the floor. Finish with your hand pointing towards the ceiling.

**Progression and Variations:**
Less advanced:
1. Support the upperarm.

More advanced:
1. Increase the weight in the hand.
Strength - shoulder - external rotators - free weights - seated - 2.

Physiotherapist Aim:
To strengthen the shoulder external rotators.

Client Aim:
To strengthen your shoulder muscles.

Physiotherapist Instructions:
Position the patient in wheelchair with shoulder abducted and supported on a table. Instruct the patient to externally rotate the shoulder.

Client Instructions:
Position yourself (or have someone position you) in wheelchair with your arm out to the side of your body, supported on a table and your elbow bent. Start with your hand pointing towards the floor. Finish with your hand pointing towards the ceiling.

Progression and Variations:
Less advanced:
1. Increase the amount of upperarm support on the table.

More advanced:
1. Decrease the amount of upperarm support on the table.

Strength - shoulder - external rotators - free weights - sidelying.

Physiotherapist Aim:
To strengthen the shoulder external rotators.

Client Aim:
To strengthen your shoulder muscles.

Physiotherapist Instructions:
Position the patient in sidelying with their elbow flexed. Instruct the patient to externally rotate the top shoulder.

Client Instructions:
Position yourself (or have someone position you) in sidelying. Start with your top elbow bent with your hand across your body. Finish with your hand away from your body. Keep your elbow bent and tucked in beside your body throughout the exercise.

Progression and Variations:
Progress using strength training principles.
Strength - shoulder - external rotators - free weights - supine.

Physiotherapist Aim:
To strengthen the shoulder external rotators.

Client Aim:
To strengthen your shoulder muscles.

Physiotherapist Instructions:
Position the patient supine with the shoulder abducted and internally rotated, and the elbow flexed. Instruct the patient to externally rotate the shoulder.

Client Instructions:
Position yourself (or have someone position you) on your back with your arm out to the side of your body and your elbow bent. Start with your hand pointing towards the floor. Finish with your hand pointing towards the ceiling.

Progression and Variations:
Less advanced:
1. Increase the amount of upperarm support on the plinth.

More advanced:
1. Decrease the amount of upperarm support on the plinth.

Strength - shoulder - external rotators - theraband - seated.

Physiotherapist Aim:
To strengthen the shoulder external rotators.

Client Aim:
To strengthen your shoulder muscles.

Physiotherapist Instructions:
Position the patient in sitting with their elbow flexed. Adjust the theraband so that the direction of pull opposes shoulder external rotation. Instruct the patient to externally rotate the shoulder while maintaining elbow flexion at 90 degrees.

Client Instructions:
Position yourself (or have someone position you) side-on to the theraband. Adjust the theraband so that the direction of pull is in alignment with the height of your elbow. Start with your far hand across your body and your elbow bent. Finish with your hand out to the side. Keep your elbow bent and tucked in beside your body throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

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- Spinal Unit, The Prince of Wales Hospital

**Strength - shoulder - external rotators - theraband - supine - quadriplegic.**

**Physiotherapist Aim:**
To strengthen the shoulder external rotators.

**Client Aim:**
To strengthen your shoulder muscles.

**Physiotherapist Instructions:**
Position the patient supine with their shoulder adducted and internally rotated, and the elbow flexed. Adjust the theraband so that the direction of pull opposes shoulder external rotation. Instruct the patient to externally rotate the shoulder while maintaining elbow flexion at 90 degrees.

**Client Instructions:**
Position yourself (or have someone position you) on your back. Adjust the theraband so that the direction of pull is in alignment with your elbow. Start with your elbow bent and your hand across your body. Finish with your hand away from your body. Keep your elbow bent and tucked in beside your body throughout the exercise.

**Progression and Variations:**
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

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**Strength - shoulder - external rotators - theraband - supine.**

**Physiotherapist Aim:**
To strengthen the shoulder external rotators.

**Client Aim:**
To strengthen your shoulder muscles.

**Physiotherapist Instructions:**
Position the patient supine with their shoulder abducted and internally rotated, and their elbow flexed. Adjust the theraband so that the direction of pull opposes shoulder external rotation. Instruct the patient to externally rotate the shoulder while maintaining elbow flexion at 90 degrees.

**Client Instructions:**
Position yourself (or have someone position you) on your back with your arm out to the side of your body and your elbow bent. Start with your hand pointing towards the floor. Finish with your hand pointing towards the ceiling.

**Progression and Variations:**
Less advanced:
1. Increase the amount of upperarm support.

More advanced:
1. Decrease the amount of upperarm support.

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- Spinal Unit, The Prince of Wales Hospital

**Strength - shoulder - external rotators - upper tone - seated.**

**Physiotherapist Aim:**
To strengthen the shoulder external rotators.

**Client Aim:**
To strengthen your shoulder muscles.

**Physiotherapist Instructions:**
Position the patient adjacent to the frame of the uppertone with the back of their hand under the lever arm. Instruct the patient to externally rotate the shoulder.

**Client Instructions:**
Position yourself (or have someone position you) adjacent to the frame of the uppertone with the back of your hand under the lever arm. Start with your elbow bent. Finish with your elbow straight.

**Progression and Variations:**
Progress using strength training principles.

**Precautions:**
1. Ensure that wheelchair does not flip backwards.

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**Strength - shoulder - external rotators - wall mounted pulleys - seated.**

**Physiotherapist Aim:**
To strengthen the shoulder external rotators.

**Client Aim:**
To strengthen your shoulder muscles.

**Physiotherapist Instructions:**
Position the patient in sitting perpendicular to the pulleys. Adjust the pulley system so that the direction of pull opposes shoulder external rotation. Instruct the patient to externally rotate the shoulder with the elbow flexed 90 degrees.

**Client Instructions:**
Position yourself (or have someone position you) side-on to the pulleys. Adjust the pulley system so that the direction of pull is in alignment with the height of your elbow. Start with your far hand across your chest and your elbow bent. Finish with your hand out to the side. Keep your elbow bent and tucked in beside your body throughout the exercise.

**Progression and Variations:**
Less Advanced:
1. Support the elbow on a table.

**Precautions:**
1. Ensure that wheelchair does not flip backwards.
**Strength - shoulder - flexors - between two plinths - prone.**

**Physiotherapist Aim:**
To strengthen the anterior chest, shoulder and triceps.

**Client Aim:**
To strengthen the muscles at the front of your shoulder.

**Physiotherapist Instructions:**
Position the patient in prone lying with their legs on one plinth and their upper body on a second lower plinth. Instruct the patient to do push-ups through their hands.

**Client Instructions:**
Position yourself (or have someone position you) on your stomach with your legs on one plinth and your upper body on a second lower plinth. Practice doing push-ups through your hands.

**Progression and Variations:**

Less advanced:
1. Adjust height of the plinth under the hands.
2. Support more of the patient’s trunk on the higher plinth.

More advanced:
1. Adjust height of the plinth under the hands.
2. Ensure less of the patient’s trunk is supported on the higher plinth.

**Precautions:**
1. Maintain integrity of skin over knuckles.
2. Preserve tenodesis grasp.

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**Strength - shoulder - flexors - commando crawling - prone.**

**Physiotherapist Aim:**
To strengthen the shoulder flexors/extensors/abductors and protractors.

**Client Aim:**
To strengthen the muscles at the front of your shoulder.

**Physiotherapist Instructions:**
Position the patient in prone lying with their upper weight supported through their elbows. Instruct the patient to drag their body forwards whilst staying up on their elbows.

**Client Instructions:**
Position yourself (or have someone position you) on your stomach with your upper weight supported through your elbows. Drag your body forwards whilst staying up on your elbows.

**Progression and Variations:**

Less advanced:
1. Position the patient on a large slide sheet or similar slippery surface.

More advanced:
1. Attach a pulley system to their ankles to resist their forward movement.
2. Instruct the patient to collapse down onto their chest and then reposition themselves on their elbows.

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- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Precautions:
1. Maintain integrity of skin over elbows. Can use elbow pads for this purpose.
2. Ensure that catheters are not displaced or blocked when performing this exercise.

Strength - shoulder - flexors - free weights - seated.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient in their wheelchair with their elbow and shoulder extended. Instruct the patient to flex the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair. Start with your arm down beside your body. Finish with your arm above your head. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - shoulder - flexors - free weights - supine - 1.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient in supine with their elbow extended. Instruct the patient to flex the shoulder.

Client Instructions:
Position yourself on your back. Start with your arm beside your body. Finish with your arm at 90 degrees to your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.
Strength - shoulder - flexors - free weights - supine - 2.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient supine with the arm beside their body. Instruct the patient to flex the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) on your back with your arm beside your body. Start with your arm beside your body. Finish with your arm above your head. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Strength - shoulder - flexors - sandbag weights - seated - quadriplegic - 1.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder and elbow extended. Attach a weight around the wrist. Apply an elbow splint. Instruct patient to flex shoulder.

Client Instructions:
Position yourself (or have someone position you) in sitting. Attach (or have someone attach) a weight around your wrist. Apply (or have someone apply) an elbow splint. Start with your arm beside your body. Finish with your arm in front of your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure the wheelchair does not flip backwards.

Injury Type
Paraplegic
C5 Quadriplegia
C6 Quadriplegia
C7 Quadriplegia
Incomplete

Difficulty Level
Advanced
Beginner
Intermediate

Equipment Required
Arm/leg splint
Free weights

Exercise Type
Strength

Body Part
Upper arm

Exercise Submitted
Sydney Spinal Units

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- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - shoulder - flexors - sandbag weights - seated - quadriplegic - 2.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder and elbow extended. Attach a weight around the wrist. Instruct the patient to flex the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair. Attach (or have someone attach) a weight around your wrist. Start with your arm beside your body. Finish with your arm in front of your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Strength - shoulder - flexors - sandbag weights - supine - quadriplegic.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position patient in supine with their shoulder and elbow extended. Attach a weight around the wrist. Apply an elbow splint. Instruct patient to flex shoulder.

Client Instructions:
Position yourself (or have someone position you) lying on the bed. Attach (or have someone attach) a weight around your wrist. Apply (or have someone apply) an elbow splint. Start with your arm beside you on the bed. Finish with your arm in front of you. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.
Strength - shoulder - flexors - theraband - seated.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder and elbow extended. Adjust the theraband so that the direction of pull opposes shoulder flexion. Instruct the patient to flex the shoulder while maintaining elbow extension.

Client Instructions:
Position yourself (or have someone position you) facing away from the theraband. Adjust the theraband so that the direction of pull is upwards from the floor. Start with your arm down beside your body. Finish with your arm above your head. Keep your elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - shoulder - flexors - theraband - supine.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient supine with their shoulder and elbow extended. Adjust the theraband so that the direction of pull opposes shoulder flexion. Instruct the patient to flex the shoulder while maintaining elbow extension.

Client Instructions:
Position yourself (or have someone else position you) on your back. Adjust the theraband so that the direction of pull is from the bottom of the bed. Start with your arm beside your body on the bed. Finish with your arm above your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

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- Spinal Unit, The Prince of Wales Hospital

Strength - shoulder - flexors - wall mounted pulleys - seated - quadriplegic.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting facing away from the pulleys. Adjust the pulley so that the direction of pull opposes shoulder flexion. Apply a wrist strap. Instruct the patient to flex the shoulder.

Client Instructions:
Position yourself (or have someone position you) facing away from the pulley. Adjust the pulley so that the direction of pull is upwards towards the ceiling. Apply (or have someone apply) a wrist strap. Start with your arm beside your body. Finish with your arm in front of your body.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that the wheelchair does not flip backwards.

Strength - shoulder - flexors - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting facing away from the pulley. Adjust the pulley system so that the direction of pull opposes shoulder flexion. Instruct the patient to flex the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) facing away from the pulley. Adjust the pulley system so that the direction of pull is upwards from the floor. Start with your arm down beside your body. Finish with your arm above your head. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

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- Spinal Unit, The Prince of Wales Hospital

Strength - shoulder - flexors/extensors - slideboard - sidelying.

Physiotherapist Aim:
To strengthen the shoulder flexors.

Client Aim:
To strengthen the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient in sidelying with their uppermost arm in an elbow-extension splint. Place a large slideboard under the arm and instruct the patient to flex the shoulder.

Client Instructions:
Position yourself (or have someone position you) in sidelying with a splint on your uppermost arm. Place a large slideboard under the arm. Practice sliding your arm up and down the slideboard. Start with your arm down beside your body. Finish with your arm out in front of your body.

Progression and Variations:
Less advanced:
1. Change the angle of the board so that gravity assists.

More advanced:
1. Change the angle of the board so that gravity adds resistance.

Strength - shoulder - flexors/extensors - slings - sidelying.

Physiotherapist Aim:
To strengthen the shoulder flexors/extensors.

Client Aim:
To strengthen the muscles at the front and back of your shoulder.

Physiotherapist Instructions:
Position the patient in sidelying. Use slings to support their arms in shoulder flexion and elbow extension. Instruct the patient to flex and extend the shoulder.

Client Instructions:
Position yourself (or have someone position you) in sidelying. Use slings to support your arm. Start with your arm beside your body. Finish with your arm out in front of your. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.
Strength - shoulder - horizontal abductors - theraband - seated.

Physiotherapist Aim:
To strengthen the shoulder horizontal abductors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder horizontally adducted. Adjust the theraband so that the direction of pull opposes horizontal shoulder abduction. Instruct the patient to horizontally abduct the shoulder while maintaining elbow extension.

Client Instructions:
Position yourself (or have someone position you) side-on to the theraband. Adjust the theraband so that the direction of pull is in alignment with the height of your shoulder. Start with your near arm out to the side of your body. Finish with your arm across your body. Keep you elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - shoulder - horizontal abductors - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the shoulder horizontal abductors.

Client Aim:
To strengthen the muscles at the back of your shoulder.

Physiotherapist Instructions:
Position the patient in sitting perpendicular to the pulley. Adjust the pulley so that the direction of pull opposes shoulder horizontal abduction. Instruct the patient to horizontally abduct the shoulder with the elbow extended.

Client Instructions:
Position the patient perpendicular to the pulley. Adjust the pulley so that the direction of pull is in alignment with the height of the shoulder. Instruct the patient to horizontally abduct the shoulder with the elbow extended.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.
**Strength - shoulder - horizontal adductors - free weights - supine.**

**Physiotherapist Aim:**
To strengthen the shoulder horizontal adductors.

**Client Aim:**
To strengthen the muscles at the front of your shoulder/chest.

**Physiotherapist Instructions:**
Position the patient supine with the shoulder flexed and horizontally abducted. Instruct the patient to horizontally adduct the shoulder with the elbow extended.

**Client Instructions:**
Position yourself (or have someone position you) on your back. Start with your arm out to the side. Finish with your arm across your body. Keep your elbow straight throughout the exercise.

**Progression and Variations:**
Progress using strength training principles.

**Strength - shoulder - horizontal adductors - modified push-ups for quads - seated.**

**Physiotherapist Aim:**
To strengthen the shoulder horizontal adductors and elbow extensors.

**Client Aim:**
To strengthen the muscles at the front of your shoulder/chest.

**Physiotherapist Instructions:**
Position the patient in their wheelchair facing a high table. Instruct the patient to perform push-ups off the table.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair facing a high table. Place your hands on the high table and practice doing push-ups off the table.

**Progression and Variations:**
Less advanced:
1. Decrease the range of elbow flexion by raising height of the table.

More advanced:
1. Increase the range of elbow flexion by lowering the height of table until chest rests on thighs.
2. Instruct the patient to perform same type of activity with their hands either on their knees or the frame of their wheelchair.

**Precautions:**
1. Maintain integrity of skin over knees or toes when positioning them under the table.

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Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
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Strength - shoulder - horizontal adductors - theraband - seated.

Physiotherapist Aim:
To strengthen the shoulder horizontal adductors.

Client Aim:
To strengthen the muscles at the front of your shoulder/chest.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder horizontally abducted. Adjust the theraband so that the direction of pull opposes horizontal shoulder adduction. Instruct the patient to horizontally adduct the shoulder while maintaining elbow extension.

Client Instructions:
Position yourself (or have someone position you) side-on to the theraband. Adjust the theraband so that the direction of pull is in alignment with the height of your shoulder. Start with your far arm out to the side of your body. Finish with your arm across your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

Strength - shoulder - horizontal adductors - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the shoulder horizontal adductors.

Client Aim:
To strengthen the muscles at the front of your shoulder/chest.

Physiotherapist Instructions:
Position the patient in sitting perpendicular to the pulleys. Adjust the pulley system so that the direction of pull opposes shoulder horizontal adduction. Instruct the patient to horizontally adduct the shoulder with the elbow extended.

Client Instructions:
Position yourself (or have someone position you) side-on to the pulleys. Adjust the pulley system so that the direction of pull is in alignment with the height of your shoulder. Start with your far arm out to the side of your body. Finish with your arm across your body. Keep your elbow straight throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.
Strength - shoulder - internal rotators - free weights - sidelying.

Physiotherapist Aim:
To strengthen the shoulder internal rotators.

Client Aim:
To strengthen your shoulder muscles.

Physiotherapist Instructions:
Position the patient in sidelying with their elbow flexed. Instruct the patient to internally rotate the bottom shoulder.

Client Instructions:
Position yourself (or have someone position you) in sidelying. Start with your bottom elbow bent and hand rotated towards the floor. Finish with your hand across your body. Keep your elbow bent and tucked in beside your body throughout the exercise.

Progression and Variations:
Progress using strength training principles.

Strength - shoulder - internal rotators - theraband - seated.

Physiotherapist Aim:
To strengthen the shoulder internal rotators.

Client Aim:
To strengthen your shoulder muscles.

Physiotherapist Instructions:
Position the patient in sitting with their elbow flexion and shoulder adducted. Adjust the theraband so that the direction of pull opposes shoulder internal rotation. Instruct the patient to internally rotate the shoulder while maintaining elbow flexion at 90 degrees.

Client Instructions:
Position yourself (or have someone position you) side-on to the theraband. Adjust the theraband so that the direction of pull is in alignment with the height of your elbow. Start with your near hand away from your chest and your elbow bent. Finish with your hand across your body. Keep your elbow bent and tucked in beside your body throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.

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Physiotherapist Aim:
To strengthen the shoulder internal rotators.

Client Aim:
To strengthen your shoulder muscles.

Physiotherapist Instructions:
Position the patient supine with their elbow flexed and shoulder externally rotated. Adjust the theraband so that the direction of pull opposes shoulder internal rotation. Instruct the patient to internally rotate the shoulder while maintaining elbow flexion at 90 degrees.

Client Instructions:
Position yourself (or have someone position you) on your back. Adjust the theraband so that the direction of pull is in alignment with your elbow. Start with your elbow bent and your hand away from your body. Finish with your hand across your body. Keep your elbow bent and tucked in beside your body throughout the exercise.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.
Strength - shoulder - internal rotators - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the shoulder internal rotators.

Client Aim:
To strengthen your shoulder muscles.

Physiotherapist Instructions:
Position the patient in sitting perpendicular to the pulleys. Adjust the pulley system so that the direction of pull opposes shoulder internal rotation. Instruct the patient to internally rotate the shoulder with the elbow flexed.

Client Instructions:
Position yourself (or have someone position you) side-on to the pulleys. Adjust the pulley system so that the direction of pull is in alignment with the height of your elbow. Start with your near hand out to the side. Finish with your hand across your chest. Keep your elbow bent and tucked in beside your body throughout the exercise.

Progression and Variations:

Less advanced:
1. support elbow on table.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - shoulder - overhead ball - sidelying.

Physiotherapist Aim:
To strengthen the shoulders and improve the ability to move from lying to sitting.

Client Aim:
To strengthen your shoulders and improve your ability to move from lying to sitting.

Physiotherapist Instructions:
Position the patient in sidelying. Instruct the patient to move up onto their bottom shoulder.

Client Instructions:
Position yourself (or have someone position you) in sidelying. Practice moving up onto your bottom shoulder.

Progression and Variations:

Less advanced:
1. Use a harness device to help decrease the amount of weight through the upper limbs.
2. Practice transferring weight on to the opposite shoulder.
3. Practice the task in reverse.

More advanced:
1. Practice the task on a soft mattress.
2. Practice the task in different environments.

Precautions:
1. Maintain the integrity of the skin over elbows. Can use elbow pads for this
Strength - shoulder - press - free weights - supine - 1.

Physiotherapist Aim:
To strengthen the shoulder muscles.

Client Aim:
To strengthen your shoulder muscles.

Physiotherapist Instructions:
Position the patient supine on the plinth. Instruct the patient to lift the weights above their chest until their elbows are straight.

Client Instructions:
Position yourself (or have someone position you) on your back on the plinth. Lift the weights above your chest until your elbows are straight.

Progression and Variations:
Progress using strength training principles.


Physiotherapist Aim:
To strengthen the shoulder horizontal adductors and elbow extensors.

Client Aim:
To strengthen the muscles at the front of your shoulder/chest.

Physiotherapist Instructions:
Position the patient supine with the shoulders abducted and elbows flexed. Instruct the patient to horizontally adduct the shoulder and extend the elbow.

Client Instructions:
Position yourself (or have someone position you) on your back with arm out to the side of your body. Start with your elbows bent. Finish with your elbows straight and your arm above your body.

Progression and Variations:
Progress using strength training principles.
**Strength - shoulder - prone.**

**Physiotherapist Aim:**
To strengthen the triceps and shoulder adductors.

**Client Aim:**
To strengthen your triceps and shoulder muscles.

**Physiotherapist Instructions:**
Position the patient prone on a plinth. Instruct the patient to do push-ups through their hands so their hips lift up off the plinth.

**Client Instructions:**
Position yourself (or have someone position you) on your stomach on a bed. Practice doing push-ups through your hands so that your hips lift up off the bed.

**Progression and Variations:**

- Less advanced:
  1. Use a harness device to help decrease the amount of weight through the upper limbs.

- More advanced:
  1. A weight can be used to increase the difficulty.
  2. Practice sustaining the push up.

**Precautions:**
1. Impaired or absent sensation of stretch.

**Strength - shoulder - protractors/retractors - slings - seated.**

**Physiotherapist Aim:**
To strengthen the shoulder protractors/retractors.

**Client Aim:**
To strengthen the muscles that move your shoulder blades.

**Physiotherapist Instructions:**
Position the patient in their wheelchair. Use slings to support their arms in shoulder flexion and elbow extension. Instruct the patient to protract and retract the shoulder.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair. Use slings to support your arms. Start with your arms in front of your body. Finish with your arms pulled backwards.

**Progression and Variations:**
Progress using strength training principles.
Strength - shoulder - retractors - wall mounted pulleys - seated.

Physiotherapist Aim:
To strengthen the shoulder retractors.

Client Aim:
To strengthen the muscles that move your shoulder blades.

Physiotherapist Instructions:
Position the patient in sitting facing the pulley. Adjust the pulley so that the direction of pull opposes shoulder retraction. Instruct the patient to retract the shoulder.

Client Instructions:
Position yourself (or have someone position you) facing the pulley. Adjust the pulley so that the direction of pull is in alignment with the height of the shoulder. Start with your arms in front of your body. Finish with your arms pulled back.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

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Strength - shoulder/elbow - shoulder depressors and elbow extensors - lifting blocks - long sitting.

Physiotherapist Aim:
To improve ability to lift body weight through upper limbs.

Client Aim:
To improve your ability to lift your body weight.

Physiotherapist Instructions:
Position the patient in long sitting on a plinth. Place a block under each hand. Instruct the patient to lift upwards through the blocks.

Client Instructions:
Position yourself (or have someone position you) on a plinth with your legs out straight in front of you. Place a block under each hand. Practice lifting upwards through the blocks.

Progression and Variations:
Less advanced:
1. Support patient in an upright position.
2. Bend the knees.

More advanced:
1. Remove the blocks.
Strength - shoulder/elbow - shoulder flexors and elbow extensors - long sitting.

Physiotherapist Aim:
To strengthen the shoulder flexors and/or the elbow extensors.

Client Aim:
To strengthen your triceps and the muscles at the front of your shoulder.

Physiotherapist Instructions:
Position the patient in long sitting with their arms extended behind them. Instruct the patient to prop their bodies through their arms whilst flexing and extending their elbows.

Client Instructions:
Position yourself (or have someone position you) on a plinth with your legs out straight in front of you. Practice propping your body through your arms whilst bending and straightening your elbows.

Progression and Variations:

Less advanced:
1. Place a pillow under the knees.
2. Use a harness device to help decrease amount of weight through the upper limbs.

More advanced:
1. Perform same activity in short sitting.
2. Place hands further away from body.
3. Place hands asymmetrically (in terms of anterior/posterior direction, lateral direction and height).

Precautions:
1. Preserve tenodesis grasp.

Strength - upper limbs - parallel bars - standing.

Physiotherapist Aim:
To strengthen the upper limbs.

Client Aim:
To strengthen your shoulder muscles.

Physiotherapist Instructions:
Position the patient in standing between parallel bars with knee-extension splints in-situ. Instruct the patient to practice lifting their body weight through their upper limbs.

Client Instructions:
Position yourself (or have someone position you) in standing between parallel bars with splints on your legs. Practice lifting your body weight through your upper limbs.

Progression and Variations:

Less advanced:
1. Use a harness device to help decrease the amount of weight through the upper limbs.

More advanced:
1. Change the height of the parallel bars.
2. Sustain the lift.
Precautions:
1. Maintain hip extension to prevent forward fall of trunk.

Strength - wrist - extensors - free weights - seated - quadriplegic.

Physiotherapist Aim:
To strengthen the wrist extensors.

Client Aim:
To strengthen your wrist muscles.

Physiotherapist Instructions:
Position the patient in their wheelchair with their arm supported on a table, their forearm pronated and their hand over the edge of the table. Suspend a weight from their wrist. Instruct the patient to extend the wrist.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your arm supported on a table, your palm facing downwards and your hand over the edge of the table. Start with your wrist dropped downwards. Finish with your wrist pulled upwards.

Progression and Variations:
Progress using strength training principles.

Strength - wrist - extensors - free weights - seated.

Physiotherapist Aim:
To strengthen the wrist extensors.

Client Aim:
To strengthen your wrist muscles.

Physiotherapist Instructions:
Position the patient in their wheelchair with their arm supported on a table, their forearm pronated and their hand over the edge of the table. Instruct the patient to extend the wrist.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your arm supported on a table, your palm facing downwards and your hand over the edge of the table. Start with your wrist dropped downwards. Finish with your wrist pulled upwards.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Injury Type
C6 Quadriplegia
C7 Quadriplegia
Incomplete

Difficulty Level
Advanced
Beginner
Intermediate

Equipment Required
Free weights
Miscellaneous

Exercise Type
Strength
Body Part
Lower arm

Exercise Submitted
Sydney Spinal Units

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:  
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Strength - wrist - extensors - sandbag weights - supine - quadriplegic.

Physiotherapist Aim:
To strengthen the wrist extensors.

Client Aim:
To strengthen your wrist muscles.

Physiotherapist Instructions:
Position the patient in supine with their elbow semi-flexed and wrist fully flexed. Attach a weight around the hand. Instruct the patient to extend the wrist.

Client Instructions:
Position yourself (or have someone position you) on your back. Attach (or have someone attach) a weight around your hand. Start with your wrist dropped downwards. Finish with your wrist pulled upwards.

Progression and Variations:
Progress using strength training principles.

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Strength - wrist - extensors - theraband - seated.

Physiotherapist Aim:
To strengthen the wrist extensors.

Client Aim:
To strengthen your wrist muscles.

Physiotherapist Instructions:
Position the patient in sitting with their shoulder semi-flexed and elbow fully extended. Adjust the theraband so that the direction of pull opposes wrist extension. Instruct the patient to extend the wrist.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your arm hanging downwards resting on your knee. Attach one end of theraband to the bottom of your wheelchair and the other end around your hand. Start with your wrist dropped downwards. Finish with your wrist pulled upwards.

Progression and Variations:
Less advanced:
1. Downgrade the colour of the theraband.

More advanced:
1. Upgrade the colour of the theraband.
Strength - wrist - flexors - free weights - seated.

Physiotherapist Aim:
To strengthen the wrist flexors.

Client Aim:
To strengthen your wrist muscles.

Physiotherapist Instructions:
Position the patient in their wheelchair with their arm supported on a table, their forearm supinated and their hand over the edge of the table. Instruct the patient to flex the wrist.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your arm supported on a table, your palm facing upwards and your hand over the edge of the table. Start with your wrist dropped downwards. Finish with your wrist pulled upwards.

Progression and Variations:
Progress using strength training principles.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Strength - wrist - flexors - free weights - supine.

Physiotherapist Aim:
To strengthen the wrist flexors.

Client Aim:
To strengthen your wrist muscles.

Physiotherapist Instructions:
Position the patient in supine. Instruct the patient to flex the wrist.

Client Instructions:
Position yourself (or have someone position you) on your back. Start with your wrist dropped downwards. Finish with your wrist pulled upwards.

Progression and Variations:
Progress using strength training principles.
Stretch - abdominals/upper chest/neck - flexors - supine.

**Physiotherapist Aim:**
To stretch or maintain length of the anterior trunk muscles.

**Client Aim:**
To stretch or maintain length of your abdominals, upper chest and neck.

**Physiotherapist Instructions:**
Position the patient supine on a bed lying over a pillow.

**Client Instructions:**
Position yourself (or have someone position you) on your back lying over a pillow.

**Progression and Variations:**
- Less advanced:
  1. Position the patient supine on the bed.
- More advanced:
  1. Position the patient supine on the bed lying over two pillows.

---

Stretch - ankle - passive ROM - seated.

**Physiotherapist Aim:**
To stretch or maintain range of the ankle.

**Client Aim:**
To stretch or maintain range in your ankle.

**Physiotherapist Instructions:**
Position the patient in their wheelchair with one foot up on their opposite knee. Instruct the patient to passively move their ankle joint through full range of motion.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair with one foot up on your opposite knee. Move your ankle up and down and around in circles.

**Progression and Variations:**
- Less advanced:
  1. Carry out the task supported in bed.

**Precautions:**
1. Ensure that wheelchair does not flip backwards.

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Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Stretch - ankle - plantarflexors - long sitting - seated.

Physiotherapist Aim:
To stretch or maintain length of the ankle plantarflexors.

Client Aim:
To stretch or maintain range in your legs and ankles.

Physiotherapist Instructions:
Position the patient in supine with their legs extended and their feet against a bolster to ensure the ankles are supported in 90 degrees dorsiflexion. A wedge under the calves will ensure the patient’s heels are free of pressure.

Client Instructions:
Position yourself on your back with your feet against a bolster to ensure your ankles are supported at 90 degrees. A wedge under the calves will ensure your heels are free of pressure.

Progression and Variations:
Less advanced:
1. Decrease the stretch.

More advanced:
2. Increase the stretch by using a commercially available device.

Precautions:
1. Impaired or absent sensation of stretch.
2. Ensure the wheelchair does not flip over backwards.

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Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
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- Spinal Unit, The Prince of Wales Hospital

Stretch - elbow - flexors - supine.

Physiotherapist Aim:
To stretch or maintain length of the elbow flexors.

Client Aim:
To stretch or maintain range in your elbow.

Physiotherapist Instructions:
Position the patient supine on a bed with their arm beside their body, elbow extended over a rolled towel.

Client Instructions:
Position yourself (or have someone position you) on your back with your arm beside your body, elbow straight over a rolled towel.

Progression and Variations:
Less advanced:
1. Decrease the size of the rolled up towel under the arm.

More advanced:
1. A weight or gentle pressure can be used to increase the stretch.
2. Increase the size of the rolled up towel under the arm.

Precautions:
1. Impaired or absent sensation of stretch.

Stretch - forearm - pronators - seated.

Physiotherapist Aim:
To stretch or maintain length of the forearm pronators.

Client Aim:
To stretch or maintain range in your forearms.

Physiotherapist Instructions:
Position the patient in their wheelchair with their forearms supinated on armrests.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your palms facing upwards on your armrests.

Progression and Variations:
Less advanced:
1. Decrease the amount of supination of the forearm.

More advanced:
1. A weight or gentle pressure can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.
Stretch - forearm - supinators - seated.

Physiotherapist Aim:
To stretch or maintain length of the forearm supinators.

Client Aim:
To stretch or maintain range in your forearms.

Physiotherapist Instructions:
Position the patient in their wheelchair with their forearms pronated on armrests.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your palms facing downwards on your armrests.

Progression and Variations:
Less advanced:
1. Decrease the amount of pronation of the forearm.

More advanced:
1. A weight or gentle pressure can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.

Stretch - hamstrings - supine - standard torque - supine.

Physiotherapist Aim:
To stretch or maintain length of the hamstrings.

Client Aim:
To stretch or maintain length in the muscles at the back of your thigh.

Physiotherapist Instructions:
Position the patient in supine on the bed. Adjust the axis of the device in alignment with the hip. Add counterweights, then the stretch weight.

Client Instructions:
Position yourself (or have someone position you) on your back. Adjust (or have someone adjust) the axis of the device in alignment with your hip. Add counterweights, then the stretch weight.

Injury Type
C4 Quadriplegia
C5 Quadriplegia
C6 Quadriplegia
Incomplete

Difficulty Level
Advanced
Beginner
Intermediate

Equipment Required
Sandbag weights

Exercise Type
Stretch

Body Part
Lower arm

Exercise Submitted
Sydney Spinal Units

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Stretch - hand - MCP and IP joints.

Physiotherapist Aim:
To stretch or maintain range of the hand.

Client Aim:
To stretch or maintain range in your hand.

Physiotherapist Instructions:
Position the patient in their wheelchair. Instruct the patient to weave their fingers through the push rim of their wheelchair so as to position the wrist in extension, MCP joints in flexion and IP joints in extension.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair. Weave your fingers through the push rim of your wheelchair so as to position your wrist backwards, knuckles bent under and finger joints out straight.

Precautions:
1. Ensure brakes are on.

Stretch - hand - long finger extensors.

Physiotherapist Aim:
To stretch or maintain length of the long finger extensors.

Client Aim:
To stretch or maintain range in your wrist and hand.

Physiotherapist Instructions:
Position the wrist, MCP, PIP and DIP joints of the hand in flexion with an appropriate glove, splint or bandage.

Client Instructions:
Position (or have someone position for you) your hand in a glove, splint or bandage to hold your hand bent.

Progression and Variations:
Less advanced:
1. Provide less stretch with the glove, splint or bandage.

More advanced:
1. Provide more stretch with the glove, splint or bandage.
### Stretch - hand - passive movements.

**Physiotherapist Aim:**
To stretch or maintain range of the fingers, hand and wrist.

**Client Aim:**
To stretch or maintain range in your hand.

**Physiotherapist Instructions:**
Position the wrist in flexion and instruct a carer/therapist to passively move the MCP and IP joints through full range of motion.

**Client Instructions:**
Instruct a carer/therapist to passively move your finger joints whilst holding your wrist bent down.

**Precautions:**
1. Preserve tenodesis grasp.

### Stretch - hand - webspace.

**Physiotherapist Aim:**
To stretch or maintain range of the long finger flexors, thumb web space and wrist flexors.

**Client Aim:**
To stretch or maintain range in your hand.

**Physiotherapist Instructions:**
Position the patient’s hand around a large cup.

**Client Instructions:**
Position your hand (or have someone position your hand) around a large cup.

**Progression and Variations:**
Less advanced:
1. Decrease the size of the cup.

More advanced:
1. Increase the size of the cup.

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**Injury Type**
- C4 Quadriplegia
- C5 Quadriplegia
- C6 Quadriplegia
- C7 Quadriplegia
- Incomplete

**Difficulty Level**
- Advanced
- Beginner
- Intermediate

**Equipment Required**
- No equipment

**Exercise Type**
- Stretch

**Body Part**
- Hand

**Exercise Submitted**
- Sydney Spinal Units

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Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Stretch - hand MCP and IP joints - self stretch.

Physiotherapist Aim:
To stretch or maintain range of the MCP joints of the hand.

Client Aim:
To stretch or maintain range in your knuckle joints.

Physiotherapist Instructions:
Instruct the patient to push their hand down onto a firm surface with their MCP joints flexed and IP joints extended.

Client Instructions:
Push you hand down onto a firm surface with your knuckle joints bent and your finger joints straight.

Precautions:
1. Preserve tenodesis grasp.

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Stretch - hip - adductors - supine.

Physiotherapist Aim:
To stretch or maintain length of the hip adductors.

Client Aim:
To stretch or maintain range in your hips.

Physiotherapist Instructions:
Position the patient in supine on a bed. Position their legs in a ‘froggie’ position with their hips abducted and externally rotated.

Client Instructions:
Position yourself (or have someone position you) on your back. Position your legs in a ‘froggie’ position with your feet up near your bottom.

Progression and Variations:

Less advanced:
1. Place a rolled up towel under the knees for support.

More advanced:
1. A weight or gentle pressure can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.
Stretch - hip - adductors - supine.

Physiotherapist Aim:
To stretch or maintain length of the hip adductors.

Client Aim:
To stretch or maintain range in your hip.

Physiotherapist Instructions:
Position the patient in supine with an abductor wedge placed between their thighs. Position the feet against a bed bolster to ensure the ankles are supported in 90 degrees dorsiflexion. A wedge under the calves will ensure the patient’s heels are lifted off the mattress and free of pressure.

Client Instructions:
Position yourself (or have someone position you) on your back with a triangular wedge placed between your thighs. Position your feet against a bed bolster to ensure your ankles are supported. A wedge under your calves will ensure your heels are lifted off the mattress and free of pressure.

Progression and Variations:
Less advanced:
1. Place a rolled towel between knees.

More advanced:
1. Place the wedge higher up between the thighs.

Precautions:
1. Impaired or absent sensation of stretch.

Stretch - hip - adductors and internal rotators - seated.

Physiotherapist Aim:
To stretch or maintain length of the hip internal rotators and hip adductors.

Client Aim:
To stretch or maintain range in your hips.

Physiotherapist Instructions:
Position the patient in their wheelchair facing a plinth. Place both feet up on the plinth with the hips abducted and externally rotated.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your legs up on a plinth in a ‘froggie’ position.

Progression and Variations:
Less advanced:
1. Place a rolled up towel under the knees for support.

More advanced:
1. A weight or gentle pressure can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.
2. Ensure that wheelchair does not flip backwards.
Stretch - hip - external rotators - seated.

Physiotherapist Aim:
To stretch or maintain length of the hip external rotators.

Client Aim:
To stretch or maintain range in your hip.

Physiotherapist Instructions:
Position the patient in their wheelchair with one foot on a small stool. The stool should be positioned just lateral to the wheelchair.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with one foot on a small stool. The stool should be positioned just to the front and side of your wheelchair.

Progression and Variations:
Less advanced:
1. Use lower stool.

More advanced:
1. A weight or gentle pressure can be used to increase the stretch and/or use higher stool.

Precautions:
1. Impaired or absent sensation of stretch.
2. Ensure that wheelchair does not flip backwards.

Stretch - hip - flexors - prone - 1.

Physiotherapist Aim:
To stretch or maintain length of the hip flexors.

Client Aim:
To stretch or maintain range in your hips.

Physiotherapist Instructions:
Position the patient prone on a plinth with pillows under their chest and knees.

Client Instructions:
Position yourself (or have someone position you) on your stomach with pillows under your chest and knees.

Progression and Variations:
Less advanced:
1. Decrease the number of pillows under the chest and knees.

More advanced:
1. Increase the number of pillows under the chest and knees.

Precautions:
1. Impaired or absent sensation of stretch.
### Stretch - hip - flexors - prone - 2.

**Physiotherapist Aim:**
To stretch or maintain length of the hip flexors and anterior trunk.

**Client Aim:**
To stretch or maintain range in your hips and trunk.

**Physiotherapist Instructions:**
Position the patient in prone lying with their upper weight supported through their elbows.

**Client Instructions:**
Position yourself (or have someone position you) on your stomach with your upper weight supported through your elbows.

**Progression and Variations:**
- **Less advanced:**
  1. Place pillows under chest.
  2. Use overhead slings to support upper trunk weight.

- **More advanced:**
  1. Transfer weight onto one elbow and lift other arm off the bed.
  2. Place elbows up on small stools.

**Precautions:**
1. Impaired or absent sensation of stretch.

### Stretch - hip - flexors - supine - 1.

**Physiotherapist Aim:**
To stretch or maintain length of the hip flexors.

**Client Aim:**
To stretch or maintain range in your hip.

**Physiotherapist Instructions:**
Position the patient in supine with one knee on their chest.

**Client Instructions:**
Position yourself (or have someone position you) on your back with one knee on your chest.

**Progression and Variations:**
- **Less advanced:**
  1. Position knee further away from chest.
  2. Position leg on a stool rather than on the chest.

- **More advanced:**
  1. A weight or gentle pressure on your opposite knee can be used to increase the stretch.

**Precautions:**
1. Impaired or absent sensation of stretch.
Stretch - hip - flexors - supine - 2.

Physiotherapist Aim:
To stretch or maintain length of the hip flexors.

Client Aim:
To stretch or maintain range in your hip.

Physiotherapist Instructions:
Position the patient supine with their legs hanging over the edge of the bed. Place one leg on a stool to stabilise the pelvis.

Client Instructions:
Position yourself (or have someone position you) on your back with your legs handing over the edge. Place one leg on a stool so that your hip is flexed.

Progression and Variations:
Less advanced:
1. Increase the height of the stool.

More advanced:
1. Decrease the height of the stool.

Precautions:
1. Impaired or absent sensation of stretch.

Stretch - hip - internal rotators - seated.

Physiotherapist Aim:
To stretch or maintain length of the hip internal rotators.

Client Aim:
To stretch or maintain range in your hip.

Physiotherapist Instructions:
Position the patient in their wheelchair with one leg on their opposite knee. A weight or gentle pressure can be used to increase the stretch.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with one leg on your opposite knee.

Progression and Variations:
Less advanced:
1. Place leg on stool rather than knee.

More advanced:
1. A weight or gentle pressure can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.
2. Ensure that wheelchair does not flip backwards.
**Stretch - hip/knee - extensors - seated.**

**Physiotherapist Aim:**
To stretch or maintain length of the hip and knee extensors.

**Client Aim:**
To stretch or maintain range in your hips, knees and ankles.

**Physiotherapist Instructions:**
Position the patient in their wheelchair facing a rail or balcony. Place the feet up on the rail with the hips and knees flexed. A strap can be used to hold the hips adducted.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair facing a rail or balcony. Place your feet up on the rail with your legs bent up towards your chest. A strap can be used to hold your legs together.

**Progression and Variations:**

- **Less advanced:**
  1. Decrease distance between the wheelchair and the rail.

- **More advanced:**
  1. Increase distance between the wheelchair and the rail.

**Precautions:**
1. Ensure power wheelchair is turned off while carrying out stretch.

**Stretch - hip/knee - quadriceps - 2 point kneeling.**

**Physiotherapist Aim:**
To stretch or maintain length of the quadriceps.

**Client Aim:**
To stretch or maintain length in the muscles at the front of your thighs.

**Physiotherapist Instructions:**
Position the patient in a 2 point kneeling position. Instruct the patient to rest their bottom on their heels.

**Client Instructions:**
Position yourself in a 2 point kneeling position. Rest your bottom on your heels.

**Progression and Variations:**

- **Less advanced:**
  1. Increase the number of pillows between the bottom and the heels.

- **More advanced:**
  1. Decrease the number of pillows between the bottom and the heels.

**Precautions:**
1. Impaired or absent sensation of stretch.
Stretch - hip/knee - quadriceps - prone.

Physiotherapist Aim:
To stretch or maintain length of hip flexors and knee extensors.

Client Aim:
To stretch or maintain range in your knee and hip.

Physiotherapist Instructions:
Position the patient prone on the bed with one knee flexed. Instruct the patient to use a strap or towel to hold the knee in a flexed position.

Client Instructions:
Position yourself (or have someone position you) on your stomach on the bed with one knee bent. Use a strap or towel to hold the knee in a bent position.

Progression and Variations:
Less advanced:
1. Lengthen the strap or towel.

More advanced:
1. A weight or gentle pressure can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.


Physiotherapist Aim:
To stretch or maintain length of the hamstrings and ankle plantarflexors.

Client Aim:
To stretch or maintain length in the muscles at the back of your thighs and ankles.

Physiotherapist Instructions:
Position the patient in their wheelchair with their legs raised up on a chair. Ensure that the patient`s ankles are firmly pushed against the backrest of the chair.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your legs raised up on a chair. Ensure that your ankles are firmly pushed against the backrest of the chair.

Progression and Variations:
Less advanced:
1. Lower height of the chair.
2. Decrease dorsiflexion.

More advanced:
1. Raise height of the chair.
2. Place a wedge under the feet to increase dorsiflexion.

Precautions:
1. Impaired or absent sensation of stretch.
2. Ensure that wheelchair does not flip backwards.

Compiled by the physiotherapists associated with the following Sydney (Australian) spinal units:
- Moorong Spinal Unit, Royal Rehabilitation Centre Sydney
- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital


Physiotherapist Aim:
To stretch or maintain length of the hamstring muscles.

Client Aim:
To stretch or maintain length in the muscles at the back of your thighs.

Physiotherapist Instructions:
Position the patient in their wheelchair with their feet up on a high chair. Use a strap attached at each end to the wheelchair to pull the ankles into dorsiflexion.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your feet up on a high chair. Use a strap attached at each end to your wheelchair to pull your ankles upwards.

Progression and Variations:
Less advanced:
1. Decrease the height of the chair.

More advanced:
1. Increase the height of the chair.

Precautions:
1. Ensure that wheelchair does not flip backwards.

Stretch - knee - hamstrings - supine.

Physiotherapist Aim:
To stretch or maintain length of the hamstrings.

Client Aim:
To stretch or maintain length in the muscles at the back of your thighs.

Physiotherapist Instructions:
Position the patient in supine with their legs in gutter splints. Hold the hips flexed by a pulley connected from the patient’s ankles to above their bed.

Client Instructions:
Position yourself (or have someone position you) on your back with your legs in gutter splints. Hold yours hips bent by a pulley connected from your ankles to above your bed.

Progression and Variations:
Less advanced:
1. Decrease the amount of hip flexion.

More advanced:
1. Increase the amount of hip flexion.

Precautions:
1. Impaired or absent sensation of stretch.
Stretch - knee - quadriceps - seated.

Physiotherapist Aim:
To stretch or maintain length of the knee extensors.

Client Aim:
To stretch or maintain range in your knee.

Physiotherapist Instructions:
Position the patient in their wheelchair with their feet tucked behind their footplate.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your feet tucked behind your footplate.

Progression and Variations:
Less advanced:
1. Position feet tucked on footplate.

More advanced:
1. A pulley positioned behind the patient and attached to the ankles can be used to increase the stretch.

Precautions:
1. Wear shoes to protect feet.

Stretch - lower limbs - parallel bars - standing.

Physiotherapist Aim:
To stretch or maintain length of the hip flexors and ankle plantarflexors.

Client Aim:
To stretch or maintain range in your lower limbs and to minimise bone loss.

Physiotherapist Instructions:
Position the patient in standing with knee extension splints. Instruct the patient to hyperextend the hips and lean backwards.

Client Instructions:
Position yourself (or have someone position you) in standing with splints on your legs. Practice leaning backwards to hold yourself upright.

Progression and Variations:
Less advanced:
1. Use a tilt table or standing frame.

More advanced:
1. Wedge under the feet.

Precautions:
1. Impaired or absent sensation of stretch.
2. Maintain hip extension to prevent forward fall of trunk.
Stretch - lower limbs - standing frame.

Physiotherapist Aim:
To stretch or maintain range of the lower limbs.

Client Aim:
To stretch or maintain range in your lower limbs and to minimise bone loss.

Physiotherapist Instructions:
Position the patient in a standing frame with a wedge under their feet. Ensure the patient’s knees and hips are extended.

Client Instructions:
Position yourself (or have someone position you) in a standing frame with a wedge under your feet. Ensure your knees and hips are straight.

Progression and Variations:
Less advanced:
1. Use a tilt table and/or no wedge under the feet.

More advanced:
1. Use knee extension splints in the parallel bars and a greater wedge under the feet.
2. Increase the tautness of the hip strap.

Precautions:
1. Ensure all screws are tightened before use.
2. Patients with loss of passive hip extension and paralysis of hip and trunk extensors will need to rely on their upper limbs to hold their trunk upright.

Stretch - lower limbs - tilt table.

Physiotherapist Aim:
To stretch or maintain range in the lower limbs.

Client Aim:
To stretch or maintain range in your lower limbs and to minimise bone loss.

Physiotherapist Instructions:
Position the patient on the tilt table with a wedge under the feet and straps over the knees, hips and chest.

Client Instructions:
Position yourself (or have someone position you) on the tilt table with a wedge under your feet and straps over your knees, hips and chest.

Progression and Variations:
Less advanced:
1. Decrease the angle of the tilt table.
2. Decrease the angle of the wedge.

More advanced:
1. Increase the angle of the tilt table.
2. Increase the angle of the wedge.

Precautions:
1. Impaired or absent sensation of stretch.
Stretch - shoulder - extensors - seated.

Physiotherapist Aim:
To stretch or maintain length of the shoulder extensors, elbow flexors and forearm supinators.

Client Aim:
To stretch or maintain range in your shoulders, arms and wrists.

Physiotherapist Instructions:
Position the patient in their wheelchair with their arms supported on a table. Position their shoulders in 90 degrees flexion, forearms in pronation and elbows in extension.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your arms supported on a table. Position your arms out in front of your body with your elbows straight and your palms facing downwards.

Progression and Variations:
Less advanced:
1. Lower height of the tables.

More advanced:
1. Increase height of the tables.
2. A weight or gentle pressure can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.
2. Shoulder pain.

Stretch - shoulder - internal rotators - bilateral - supine.

Physiotherapist Aim:
To stretch or maintain length of the shoulder internal rotators and adductors.

Client Aim:
To stretch or maintain range in your shoulders.

Physiotherapist Instructions:
Position the patient in supine with their hands behind their head. Ensure that the elbows are free to drop down onto the mattress.

Client Instructions:
Position yourself (or have someone position you) on your back with your hands behind your head. Ensure that your elbows are free to drop down onto the mattress.

Progression and Variations:
Less advanced:
1. Position hands on chest rather than behind head.

More advanced:
1. A weight or gentle pressure can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.
2. Shoulder pain.
**Stretch - shoulder - internal rotators - seated.**

**Physiotherapist Aim:**
To stretch or maintain length of the shoulder internal rotators and adductors.

**Client Aim:**
To stretch or maintain range in your shoulders.

**Physiotherapist Instructions:**
Position the patient in their wheelchair with their hands behind their head. Support the weight of their arms with a table.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair with your hands behind your head. Support the weight of your arms with a table.

**Progression and Variations:**
Less advanced:
1. Lower the height of the tables.

More advanced:
2. A weight or gentle pressure can be used to increase the stretch.

**Precautions:**
1. Impaired or absent sensation of stretch.
2. Shoulder pain.

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**Stretch - shoulder - internal rotators - unilateral - supine.**

**Physiotherapist Aim:**
To stretch or maintain length of the shoulder internal rotators.

**Client Aim:**
To stretch or maintain range in your shoulder.

**Physiotherapist Instructions:**
Position the patient in supine with their shoulder abducted and externally rotated and their elbow flexed. Support their hand on a pillow.

**Client Instructions:**
Position yourself (or have someone position you) on your back with your hand supported above your head on a pillow.

**Progression and Variations:**
Less advanced:
1. Place a towel under the elbow.

More advanced:
1. A weight or gentle pressure on the elbows can be used to increase the stretch.

**Precautions:**
1. Impaired or absent sensation of stretch.
2. Shoulder pain.
Stretch - shoulder - pectoralis - seated.

Physiotherapist Aim:
To stretch or maintain length of the pectoralis.

Client Aim:
To stretch or maintain length in the muscles across your chest.

Physiotherapist Instructions:
Position the patient in their wheelchair in a doorway. Instruct the patient to use the doorway to stretch their pectoralis.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair just in front of a doorway. Use the doorway to apply a stretch to the muscles across the front of your chest.

Progression and Variations:
Less advanced:
1. Increase the distance between the wheelchair and the doorway.

More advanced:
1. Decrease the distance between the wheelchair and the doorway.

Precautions:
1. Impaired or absent sensation of stretch.

Stretch - shoulder - retractors - seated.

Physiotherapist Aim:
To stretch or maintain length of the shoulder retractors.

Client Aim:
To stretch or maintain length in the muscles between your shoulder blades.

Physiotherapist Instructions:
Position the patient in their wheelchair with their arms supported on a table. Position their shoulders in flexion and adduction with their arms across their body.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your arms supported on a table. Position your arms up forwards bent across your body.

Progression and Variations:
Less advanced:
1. Decrease the height of the table.

More advanced:
1. A strap can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.
2. Shoulder pain.
Stretch - shoulder - retractors - supine.

Physiotherapist Aim:
To stretch or maintain length of the shoulder retractors.

Client Aim:
To stretch or maintain length in the muscles between your shoulder blades.

Physiotherapist Instructions:
Position the patient supine on a bed with their arms supported on pillows. Position their shoulders in flexion and adduction with their arms across their body.

Client Instructions:
Position yourself (or have someone position you) on your back with your arms supported on pillows. Position your arms up forwards bent across your body.

Progression and Variations:
Less advanced:
1. Decrease the number of pillows on which your arms are supported.

More advanced:
1. A strap can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.

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Stretch - shoulder - triceps - seated.

Physiotherapist Aim:
To stretch or maintain length of the posterior deltoids and rhomboids.

Client Aim:
To stretch or maintain length in the muscles behind your shoulder.

Physiotherapist Instructions:
Position the patient in their wheelchair. Instruct the patient to use one hand to apply a stretch to the posterior structures of the opposite shoulder.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair. Use one hand to stretch the opposite shoulder by pulling the arm across your body.

Progression and Variations:
Less advanced:
1. Decrease the force to pull the arm across the body.

More advanced:
1. Increase the force to pull the arm across the body.

Precautions:
1. Impaired or absent sensation of stretch.

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- Spinal Unit, Royal North Shore Hospital and
- Spinal Unit, The Prince of Wales Hospital

Physiotherapist Aim:
To stretch or maintain length of the shoulder adductors, elbow flexors and forearm pronators.

Client Aim:
To stretch or maintain range in your shoulders, arms and wrists.

Physiotherapist Instructions:
Position the patient in their wheelchair with their arms supported on a table. Position their shoulders in 90 degrees abduction, forearms in supination and elbows in extension.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your arms supported on a table. Position your arms out to the side with your elbows straight and your palms facing upwards.

Progression and Variations:
Less advanced:
1. Lower height of the tables.

More advanced:
1. Increase height of the tables.
2. A weight or gentle pressure can be used to increase the stretch.

Precautions:
1. Impaired or absent sensation of stretch.
2. Shoulder pain.

Physiotherapist Aim:
To stretch or maintain length of the shoulder adductors, elbow flexors and forearm pronators.

Client Aim:
To stretch or maintain range in your shoulders, arms and wrists.

Physiotherapist Instructions:
Position the patient in their wheelchair with their arms supported on a table. Position their shoulders in 90 degrees abduction, forearms in pronation and elbows in extension.

Client Instructions:
Position yourself (or have someone position you) in your wheelchair with your arms supported on a table. Position your arms out to the side with your elbows straight and your palms facing downwards.

Progression and Variations:
Less advanced:
1. Lower height of the tables.

More advanced:
1. A weight or gentle pressure can be used to increase the stretch.
Precautions:
1. Impaired or absent sensation of stretch.
2. Shoulder pain.

**Stretch - shoulder/forearm - extensors/pronators - seated.**

**Physiotherapist Aim:**
To stretch or maintain length of the shoulder extensors, elbow flexors and forearm pronators.

**Client Aim:**
To stretch or maintain range in your shoulders, arms and wrists.

**Physiotherapist Instructions:**
Position the patient in their wheelchair with their arms supported on a table. Position their shoulders in 90 degrees flexion, forearms in supination and elbows in extension.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair with your arms supported on a table. Position your arms out in front of your body with your elbow straight and your palms facing upwards.

**Progression and Variations:**
Less advanced:
1. Lower height of the tables.

More advanced:
1. Increase height of the tables.
2. A weight or gentle pressure can be used to increase the stretch.

**Precautions:**
1. Impaired or absent sensation of stretch.
2. Shoulder pain.

**Stretch - trunk - side flexors - sidelying.**

**Physiotherapist Aim:**
To stretch or maintain length of the trunk sideflexors.

**Client Aim:**
To stretch or maintain length in the muscles at the side of your trunk.

**Physiotherapist Instructions:**
Position the patient in sidelying over a pillow.

**Client Instructions:**
Position yourself (or have someone position you) in sidelying over a pillow.

**Progression and Variations:**
Less advanced:
1. Position the patient in sidelying without pillows.

More advanced:
1. Position the patient in sidelying with two pillows.
Stretch - upper limbs - passive movements - seated.

**Physiotherapist Aim:**
To stretch or maintain range of the upper limbs.

**Client Aim:**
To stretch or maintain range in your shoulder.

**Physiotherapist Instructions:**
Position the patient in their wheelchair and instruct a carer/therapist to passively move the patient’s shoulder.

**Client Instructions:**
Position yourself (or have someone position you) in your wheelchair and instruct a carer/therapist to passively move your shoulder.

**Precautions:**
1. Shoulder pain.

Stretch - wrist/finger - flexors - weight bearing on hands - seated.

**Physiotherapist Aim:**
To stretch or maintain length of the wrist and finger flexors.

**Client Aim:**
To stretch or maintain range in your wrists.

**Physiotherapist Instructions:**
Position the patient in long or short sitting on a plinth. Instruct the patient to prop their body through their hands. The hands should be positioned behind their body with the wrist, MCP and IP joints extended.

**Client Instructions:**
Position yourself (or have someone position you) in sitting on a plinth. Prop your body through your hands. Your hands should be positioned behind your body with your fingers out straight.

**Progression and Variations:**

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Less advanced:
1. Position the hands closer to the body.
2. Place a small block under the palm to decrease the amount of wrist extension.

More advanced:
1. Position the hands further away from the body.
2. Position the hands flat on a wall to increase the amount of wrist extension.

Precautions:
1. Impaired or absent sensation of stretch.

Stretch - wrist/hand - flexors - seated.

Physiotherapist Aim:
To stretch or maintain range of the wrist and hand.

Client Aim:
To stretch or maintain range in your wrist and hand.

Physiotherapist Instructions:
Position the patient’s hand in the device with the wrist and fingers in extension. Ensure that the forearm is firmly strapped and the wrist joint aligned with the hinge of the device.

Client Instructions:
Position (or have someone position) your hand in the device with your wrist and fingers out straight. Ensure that your forearm is firmly strapped and your wrist joint aligned with the hinge of the device.

Progression and Variations:
Less advanced:
1. Decrease wrist extension.

More advanced:
1. Increase wrist extension.

Precautions:
1. Impaired or absent sensation of stretch.

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- Spinal Unit, The Prince of Wales Hospital

Project funded by

Rehabilitation Studies Unit:
The Rehabilitation Studies Unit is an Academic Unit of the Faculty of Medicine, The University of Sydney and is located on the campus of the Royal Rehabilitation Centre Sydney (a specialist rehabilitation hospital). It receives generous funding from the Motor Accident Authority of NSW. Its primary mission is to be a leader within Australia in the development of knowledge and practice of rehabilitation for people with injury related disability. It has responsibilities in education, research and policy development.

http://www.rehab.med.usyd.edu.au

Motor Accidents Authority of NSW:
The Motor Accidents Authority (MAA) is a statutory corporation that regulates the NSW Motor Accidents Scheme. This scheme is the Compulsory Third Party (CTP) personal injury insurance scheme for motor vehicles registered in NSW, Australia. The MAA has a key role in supporting the improved management of claimant's injuries within the NSW CTP scheme. This is done through a range of strategies including funding rehabilitation initiatives targeting groups that are a high cost to the CTP scheme.

http://www.maa.nsw.gov.au

Royal Rehabilitation Centre Sydney:
The Royal Rehabilitation Centre Sydney (RRCS) is a highly specialised physical rehabilitation facility located within the Northern Sydney Area Health Service of Sydney, Australia. It provides individual rehabilitation programs for adults with disabilities including those arising from spinal cord injury, amputations, traumatic brain injury and orthopaedic injury and illness.


Royal North Shore Hospital:
Royal North Shore Hospital is a 740 bed acute general teaching hospital located in the lower north shore suburb of Sydney, Australia. It is a teaching hospital of the University of Sydney and the University of Technology, Sydney and part of a cooperative network of public and private hospitals and community health services in the Northern Sydney Area.


Prince Of Wales Hospital:
The Prince of Wales Hospital and Community Health Services, based in Sydneys eastern suburbs but serving all of

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NSW, is a relatively small hospital but with a highly complex caseload. POW is a principal teaching hospital of the University of NSW and has a decentralised structure, based on Clinical Programs which engage senior clinicians in day-to-day management. There are four Clinical Programs: (1) Medicine and Oncology; (2) Surgery and Anaesthetics; (3) Cardiac Services, Intensive Care and High Dependency Unit; and (4) Neurosciences, Rehabilitation and Spinal Medicine. A support program includes Allied Health, Aged Care and Community Health, while the hospital also hosts a busy Mental Health program which is managed by South East Health.


State Spinal Cord Injury Service:

The NSW State Spinal Cord Injury Service (SSCIS) was created by the Greater Metropolitan Transitional Task Force (GMTT) to coordinate the management of people who have sustained a SCI in NSW, Australia. The SSCIS organization structure is designed to facilitate clinician driven decision making processes and to create opportunities for all SSCIS stakeholders to contribute to spinal cord injury services coordination and development. The SSCIS acknowledges and works in collaboration with the existing governance structures within NSW Health and Area Health Services, and other stakeholders. The primary objective of SSCIS is to improve service delivery and ensure that people with spinal cord injuries residing in New South Wales receive the highest quality services. Specifically, the aims of SSCIS are to coordinate clinical services, establish uniform clinical practice, develop clinical information systems, to form community and clinical networks and to coordinate the research, education and prevention efforts.


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