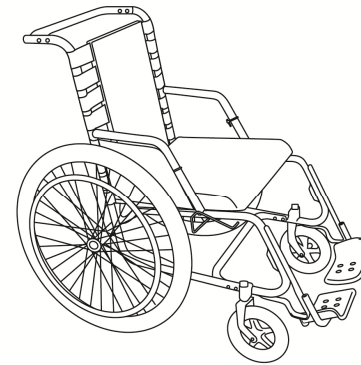


Free Wheelchair Mission

*We hope this chair makes life easier for you
and gives you joy.*

*With Best Wishes,
The Free Wheelchair Mission*



GEN_2 & GEN_3 User Training Manual

NOTES

Written by Kathryn Kumagai, DPT¹ and Susan Shore, PhD, PT¹

Illustrations by VPD Inc, Ana Schoendofer and Staci Moore

GEN_2 & GEN_3 is an all purpose wheelchair intended to provide mobility to persons restricted to a seated position.

The wheelchair is designed for use over rough ground and has a maximum weight bearing capacity of 100kg(220lbs).

Free Wheelchair Mission does not offer a warranty for the GEN_2 & GEN_3 wheelchair, nor does it include a service manual beyond what is included in this User Manual.

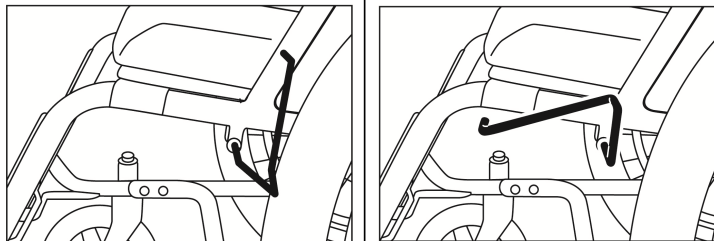
©FWM

¹ Azusa Pacific University. Azusa, California. 2008

WHEELCHAIR INSPECTION

When you receive your new wheelchair, inspect it to make sure that it is in working order. Inspect it every day that you use it.

- Check for **broken or damaged parts**.
- Look at the **seat** to make sure it is adjusted properly and undamaged
- Check that the **rear wheels** are on tightly, rotate freely, and do not wobble. If they do, ask someone to tighten the bolts that hold them.
- The tires should be **inflated** so they feel firm to your fingers.
- Make sure that the **brakes** lock and keep the chair from rolling.



LOCKED

UNLOCKED

SERVICE

If some part of the wheelchair breaks and you can no longer use it, please contact us so we can fix the problem.

If you no longer need the wheelchair, please contact us, as we must give it to another person in need.

TO CONTACT US

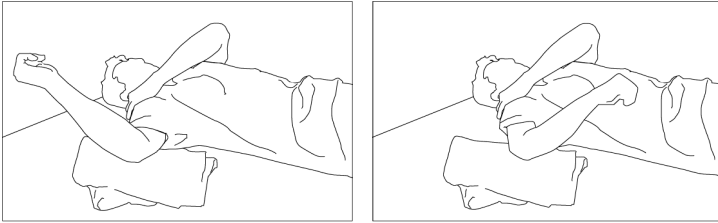
Contact us by sending a post card, a text message by cell phone, or by calling us.

Our Address Is: _____

Our Text Message Number Is: _____

Our Phone Number Is: _____

Shoulder Exercises

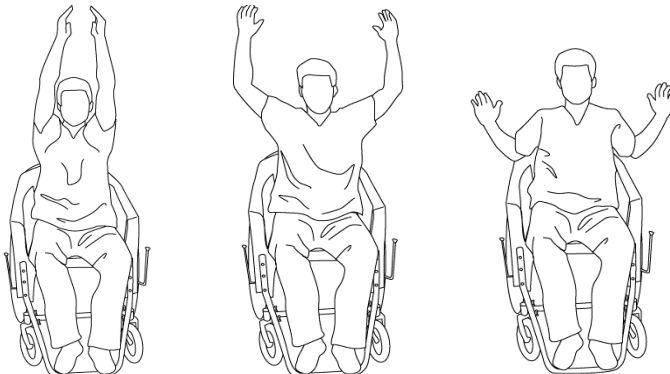


Exercise One

- Lie face up.
- Place a towel under the elbow.
- Bend the elbow to a right angle.
- Slowly rotate the shoulder up and down without letting the shoulder blade come up off of the bed.
- Repeat this 15 times

Exercise Two

- Reach up overhead as high as you can.
- Pull your elbows down as the shoulder blades come together and the arms come out to the side. There should be a stretch in the front of the chest.
- Hold for 20—30 seconds and repeat 10 times.



WHEELCHAIR MAINTENANCE

Weekly Care

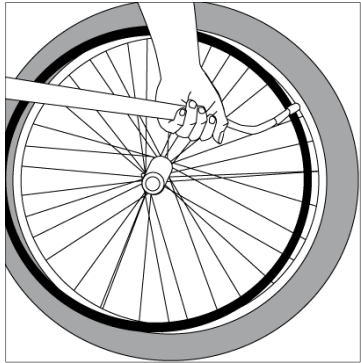
- Inspect the **wheels** to make sure the spokes and the rim are not bent.
- Inspect the front **casters** for wobbling.
- Check the **tires** to see that they are fully inflated. They should feel firm.

Monthly Care

- Clean the **frame** thoroughly and check for cracks.
- Check for loose **nuts and bolts**.
- Check **wheel alignment**. When you are not sitting in the wheelchair and it is on level ground, push it to see if it goes in a straight line. If it does not, have someone inspect the **wheel bearings**.

If the wheelchair requires service beyond your ability, see the back cover of this manual for assistance.

ADDING AIR TO THE TIRES



Your wheelchair comes with a hand pump and patch kit attached to the frame.

It is best to add air to the rear tires whenever necessary.

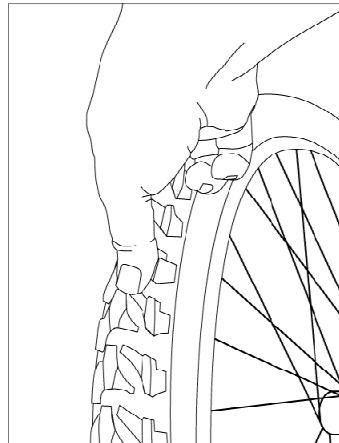
You can tell this is necessary when you feel the tires are getting soft.

Inflating the Tire

Use the pump to fill the tire, checking to be sure that it is inflating evenly.

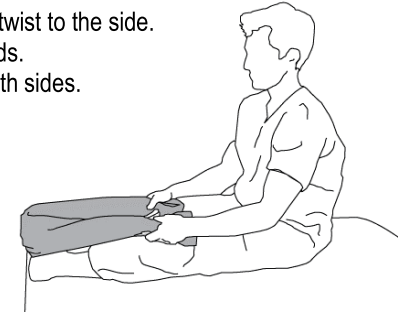
Full tires should feel firm to the touch but it should not be difficult to lock the brakes.

If a tire does not hold air, there may be a puncture in the tire. You will need to have someone help you repair the tire.



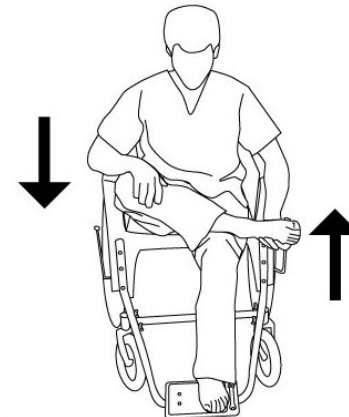
Plantar Flexor Stretch

- Sit with legs stretched in front of you.
- Use a towel to pull toes and forefoot toward the body.
- Keep the knee straight.
- Do not allow the ankle to twist to the side.
- Hold this for 20-30 seconds.
- Repeat this 5 times on both sides.



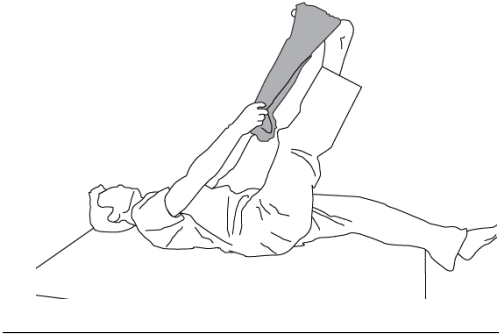
Hip Rotation and Adductor Stretch

- Sitting in a chair, pull one leg up. Cross the ankle over the opposite knee.
- Hold this for 20-30 seconds.
- Repeat this 5 times on both sides.



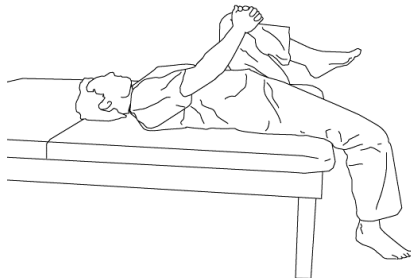
Hamstring Stretch

- Lie on your back to support the spine.
- With one leg up in the air, use a towel to pull your foot towards you.
- Keep the knee straight.
- Hold this for 20-30 seconds.
- Repeat this 5 times on both sides.



Hip Flexor Stretch

- Lie on your back at the foot of the bed.
- Pull one knee to your chest.
- Let the other leg hang off the edge of the bed. Pulling the foot back toward the bed will increase the stretch.
- Hold this for 20-30 seconds.
- Repeat this 5 times on both sides.



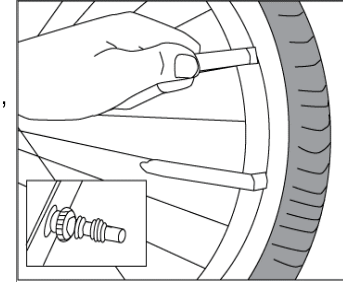
PATCHING A HOLE

Taking Off the Tire

Let all of the remaining air out of the tire by taking off the valve cap and pressing the valve down at an angle.

Pull the tire over the top of the rim.

Once the whole tire is off of the rim, take out the inner tube.



If the Hole is SMALL

One way to find the hole is by listening for escaping air. You can also put the whole tube under water and look for bubbles.

Once you have found where the hole is, **clean** the area around the hole.

Put glue over the hole and let it dry for **10 minutes**.

After the glue is dry, press a patch on the glued area. Leave it for **20 minutes**.

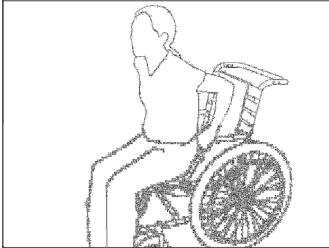
Put the inner tube back into the tire and put the tire back on the rim. Make sure to get the valve back through the hole in the wheel rim. Inflate the tire as usual.

If the Hole is LARGE

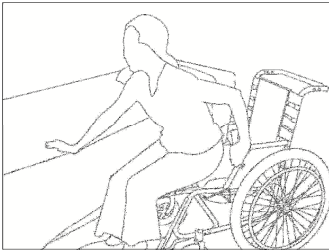
You may need to replace the tube. If you require assistance with this service, see the information on the **Back Cover**.

TRANSFERS

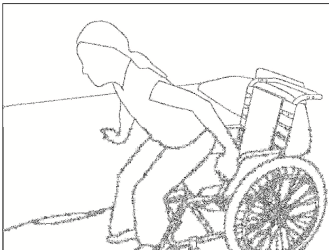
Move Yourself from the Chair to the Bed



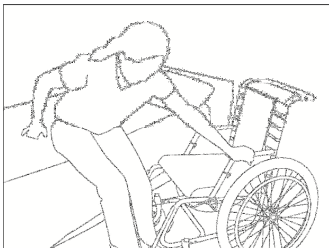
- Place your wheelchair at an angle to the bed and lock the brakes.



- Lift each footplate and swing them to the sides
- Slide forward in your chair, placing your feet firmly on the ground,



- Put one hand on the bed, and one on the armrest of the wheelchair.
- Lean forward, push up with your hands, and straighten your legs to stand.



- Turn and reach for the bed. Sit down.

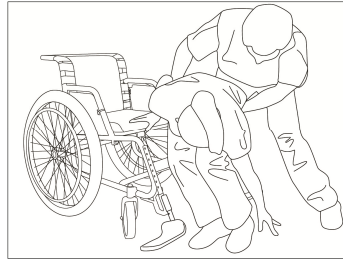
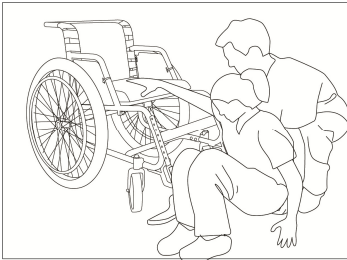
HOME EXERCISES

It is very important for you to stretch out your leg muscles when you sit in the wheelchair for long periods of time. This will prevent your joints from tightening in a short position and help keep your skin from breaking down.

Shoulder exercises should also be performed to keep your arms strong and flexible for pushing the wheelchair. Exercises should be done once a day.

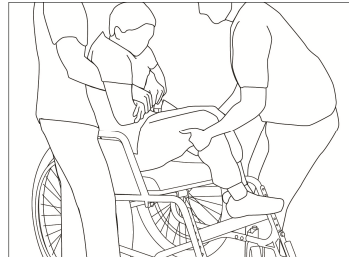
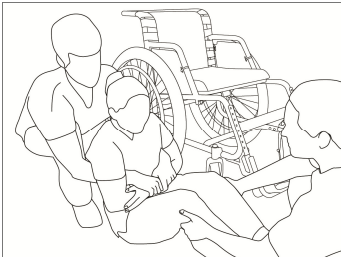
Fall Recovery– Back Approach

- Set the brakes so the wheelchair cannot move.
- Lift each footplate and swing to the side.
- Move as close to the chair as you can.
- Pull your legs in close to your body.
- Place one hand on the seat, keep one hand on the floor.
- Lean as far forward as you can and swing your body from the floor up onto the seat of the chair.



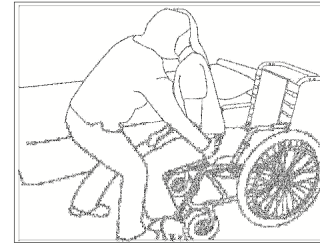
Fall Recovery– Two Helpers

If you are unable to use the methods shown previously, two helpers can lift you as shown below.



STANDING TRANSFERS

With A Helper



- Angle the wheelchair toward the bed and keep it close.



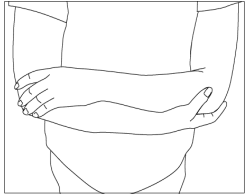
- Your helper will stand in front of you and hold you around the waist or under the buttocks to help you stand.



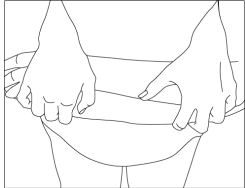
- The helper will slowly turn and lower you onto the bed.

TWO PERSON LIFTS

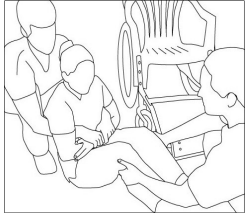
Method One



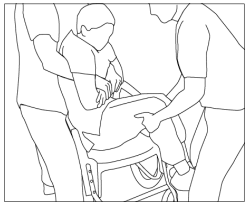
- Cross your arms firmly across your chest.



- One helper will stand behind you and hold you by the arms.



- The person at your head will hug you around the chest. The second person will support your legs.

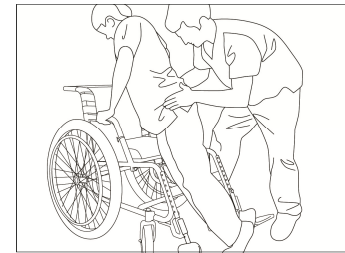


- Helpers will lift you at the same time and lower you into the chair.

**Remember that most of the weight is in your upper half—
The helper who is strongest should lift that part.**

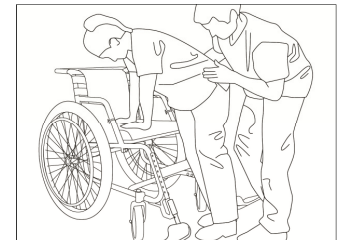
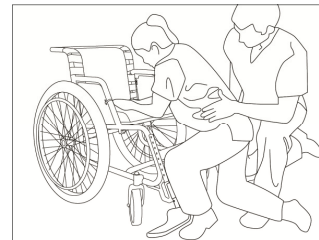
Fall Recovery– Front Approach

- Set the brakes so the wheelchair cannot move.
- Lift each footplate and swing to the side.
- Move as close to the chair as you can by leaning over your elbows and pulling.
- Place your hands on the armrests.
- Lean as far forward as you can and pull yourself up, turning your buttocks into the chair.



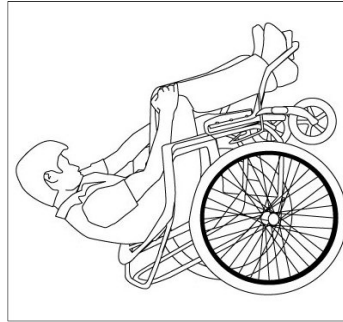
Fall Recovery– Half Kneeling

- Set the brakes so that the wheelchair cannot move.
- Lift each footplate and swing to the side.
- Pull your stronger leg up to a half-kneel position.
- Lean forward over the chair.
- Pull forward with your arms and legs, pivoting around to get your buttocks onto the seat.



FALLS

If you feel the wheelchair tip and you are in danger of falling, you should take steps to protect your head and arms.



- Pull your arms in.
- Tuck your chin down and tilt your head forward.
- Lean forward as the chair tips backward.
- You can hold onto the arms or the seat of the chair.
- **Don't try to stop the fall by reaching out with your arms.**

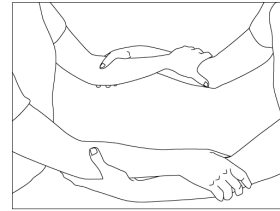
Fall Recovery

If you fall out of your chair, you can pull yourself back into the wheelchair or have a helper assist you back into the chair.

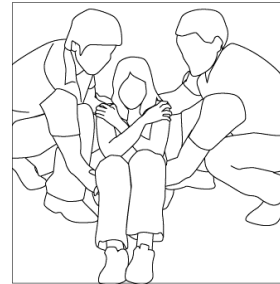
Helpers should remember to keep their back straight, bend their knees and lift with their legs. They should always stand behind you, lifting from under your buttocks or hips.

TWO PERSON LIFTS

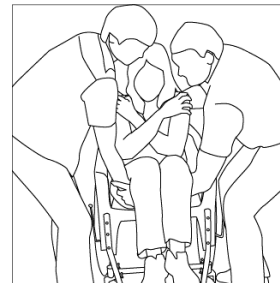
Method Two



- Helpers interlock forearms.



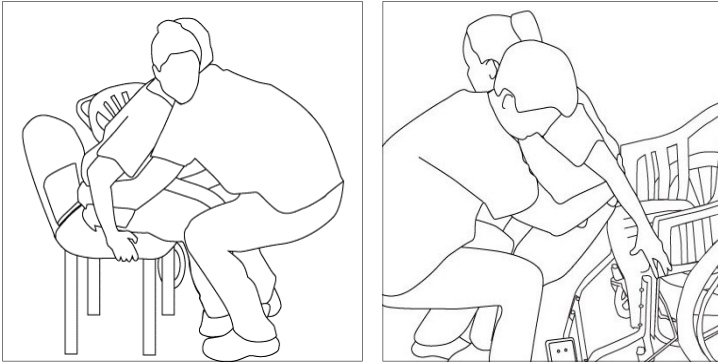
- One set of forearms supports you behind your back– you will need the most support here.
- One set of forearms supports you under the legs.



- The helpers lift you together and place you in the chair.

TURNING TRANSFERS

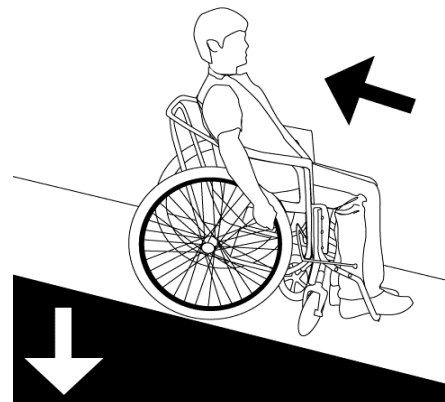
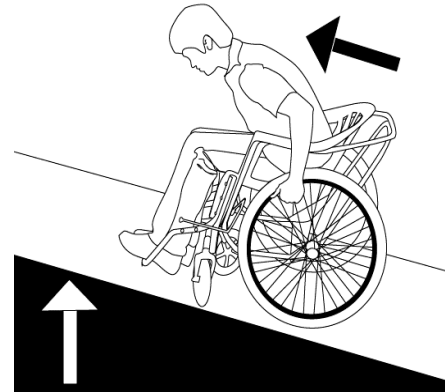
A Helper Should Assist



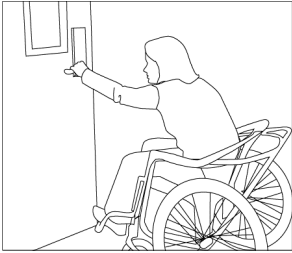
- The helper will stand in front of you, supporting you under the buttocks.
- Lift each footplate and swing to the side.
- Place your feet flat on the floor.
- The helper should hold your legs between their knees.
- Lean forward and push yourself up with your arms.
- Your helper will lift you and turn you to sit in the wheelchair.

Going Up and Down a Ramp

- Lean forward when going up.
- Lean backward when going down, using hands on the wheels to slow down the descent.
- If it is very steep, consider going side to side across the incline.



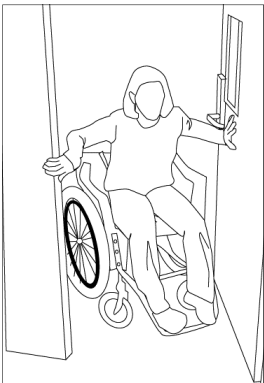
Going Through A Door



- Approach the door at an angle.

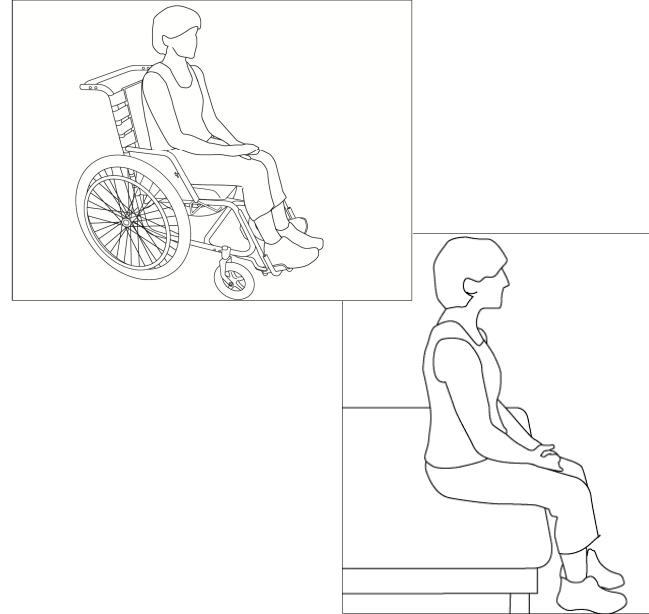


- Use one hand to open the door and the other hand to push the chair.



- With one hand on the door and the other on the frame, pull yourself into the room.

CORRECT SITTING POSTURE IN YOUR WHEELCHAIR



Pelvis should be level.

Torso should be straight in a neutral position.

Hips and knees should be straight.

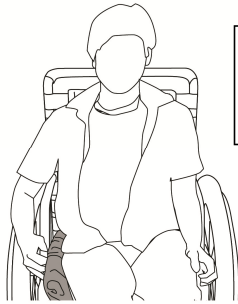
Feet should be flat on the footrests.

CORRECTED SITTING

INCORRECT

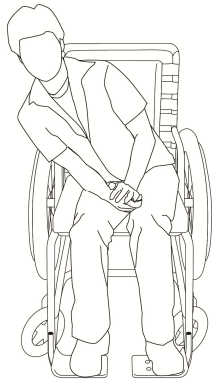


CORRECT

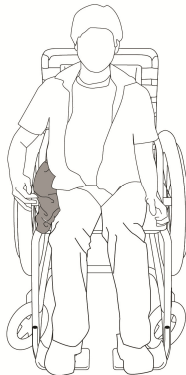


A towel roll added under the pelvis can correct alignment.

INCORRECT



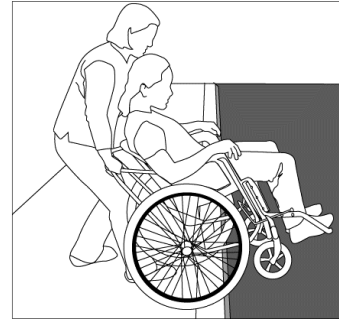
CORRECT



A long towel roll or blanket can be used to straighten and support the side of the torso.

Going Down A Curb With Assistance

- The helper should tilt you backwards.
- Slowly lower the chair down the curb, keeping the front wheels up to keep you from falling out of the chair.



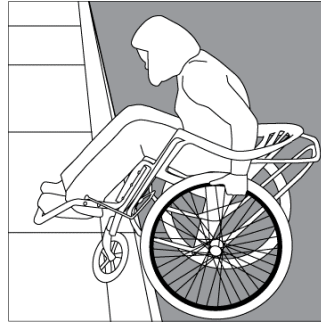
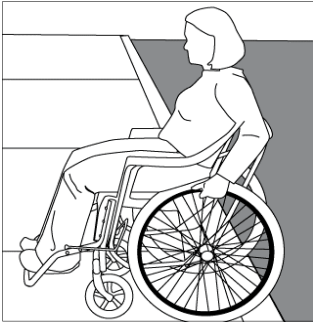
Going Up A Curb With Assistance

- The helper should push down on the back of the chair and lift the front wheels onto the curb.
- Then lift the back wheels onto the curb.



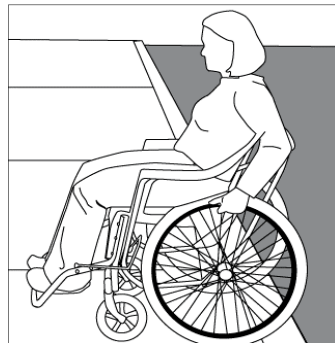
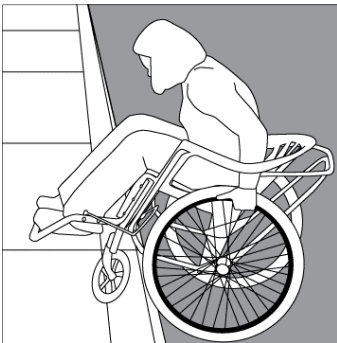
Going Down a Curb Independently

- Line the back wheels perpendicular to the curb.
- Lean forward and pull the wheels backwards off the curb.



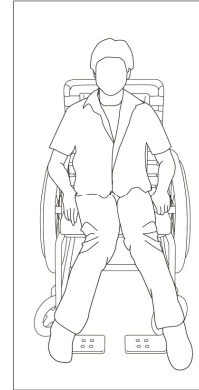
Going Up a Curb Independently

- Propel yourself quickly toward the curb.
- Perform a wheelie to get the front wheels up on the curb.
- Use your momentum to help push the back wheels up the curb.

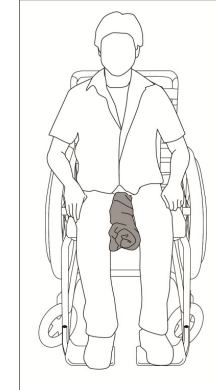


CORRECTED SITTING

INCORRECT

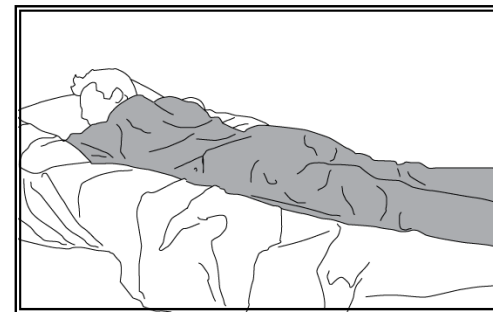


CORRECT



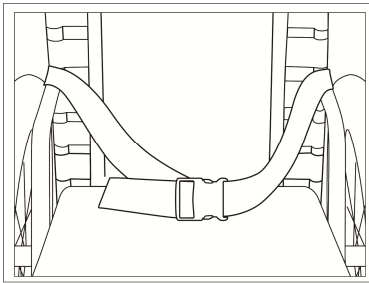
A towel roll between the thighs can keep the legs from falling together.

SLEEPING POSITION



If possible, you should sleep on your stomach, even for part of the night. This will help to stretch the back, hips, and knees.

USING A LAP BELT



If the person using the wheelchair is small, restless, or cannot sit up straight by themselves, you must use a lap belt.

- The lap belt on the wheelchair chair can be used to help you sit correctly in the chair and keep you from sliding out or falling forward.
- You may need two belts for full restraint.
- The first should be positioned around the chair above your waist.
- If necessary, use another belt around the chair positioned over your chest.
- Push the buckle together until you hear it click.
- Pull the strap so that it is tight enough to keep you in the chair and upright, but not too tight to cut off any circulation.

Wheelies Over Obstacles and Grass

Performing a wheelie can prevent the front casters from getting caught in tall grass or other obstacles.

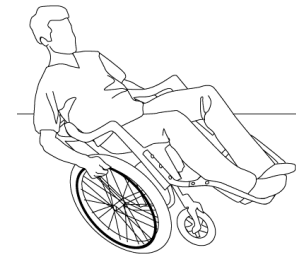
Your helper can push down on the handles to lift the front of the wheelchair over the obstacle.



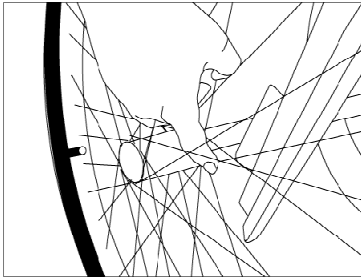
Independent Wheelies

To perform a wheelie alone, lean backward and push the wheels forward.

Your helper should stand very close to the back of the wheelchair and be ready to catch you when you are practicing a wheelie for the first time.



MOVING IN THE WHEELCHAIR



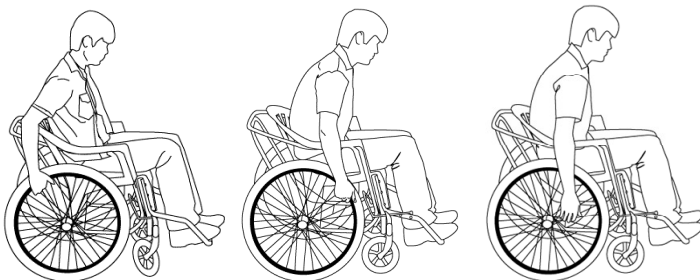
Now you will read about different ways of moving in your wheelchair. When you are moving it is important to remember not to get your fingers caught in the wheels.

Use your footrest to keep your feet out of the way of the wheels.

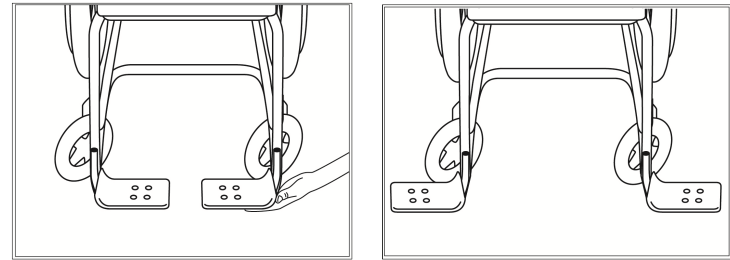
PROPELLING THE WHEELCHAIR

Once you are sitting correctly in the wheelchair, you should practice maneuvering over different surfaces.

- To wheel, start by leaning back, hands slightly behind you.
- Push with your hands, while your body also moves forward.
- Allow your hands to fall down, and bring them back to starting position.



USING THE FOOTREST



The footrest will swing away for easy transfers in and out of the chair.

- Push up from the bottom
- Swing to the outside of the chair when transferring in and out.
- Place footrest back into position to rest feet on while in chair.

BUILDING TOLERANCE TO THE WHEELCHAIR

If you are not used to sitting for long periods of time, you should not begin by sitting in your wheelchair all day. Tolerance must be built up gradually to allow you to sit for longer periods of time and to prevent pressure sores.

You should sit for **one hour only** and then perform a skin inspection of the buttocks and low back.

- If **no redness** is present, you may sit for one more hour.
- If **redness** is present, you should **not** sit again until the redness is gone.

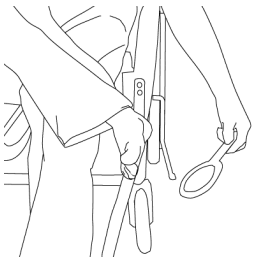
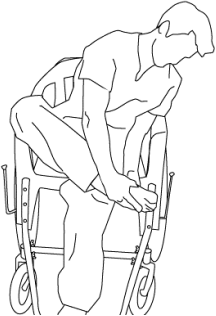
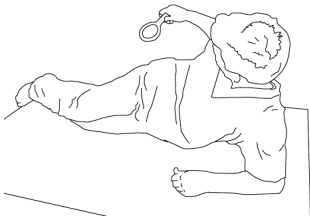
One hour of sitting may be added each day until you are able to sit for a full day.

AREAS AT RISK FOR PRESSURE SORES

All bony areas are susceptible to pressure sores.

The common sites for sores are:

Tail Bone Area
Sides of the Hips
Area that you Sit on
Back of the Spine



Skin Inspection

All areas at risk for skin breakdown must be inspected daily by yourself or a family member:

- Buttocks
- Side of Hips
- Tail Bone
- Spine
- Bottom of Feet

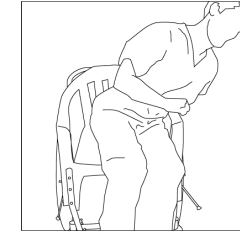
If red areas are present, you should not sit in the wheelchair again until the red areas go away.

PRESSURE RELIEF

To prevent pressure sores it is important to move into a pressure relief position every 15 minutes to relieve stress on bony areas.

Each pressure relief position should be held for 1 whole minute. Choose one of the following:

- Leaning to Each Side



- Lifting with Both Hands



- Leaning Forward

