Manual Wheelchair Handbook

Physical Medicine & Rehabilitation Service
Durham Veterans Affairs Medical Center

VA HEALTH CARE | Defining EXCELLENCE in the 21st Century

TABLE OF CONTENTS

I. Introduction……...Pg 3

II. Parts of a wheelchair……...Pg 3

III. Using your wheelchair…….Pg 5

- A. Keeping from tipping over or falling out of the wheelchair…..Pg 5
- B. Transferring into and out of the wheelchair……...Pg 5
- C. Pushing the wheelchair on flat surfaces…….Pg 6
- D. Dealing with inclines and uneven surfaces…….Pg 7
  - i. Crossing a threshold or obstacle…….Pg 7
  - ii. Ramps…….Pg 9
  - iii. Curbs…….Pg 11
- E. Transportation……Pg 13
- F. Doorways, tight turns, and small spaces……Pg 13
  - i. Doors……..Pg 13
  - ii. Tight spaces……..Pg 15

IV. Pressure sores (“bed sores”)……..Pg 16

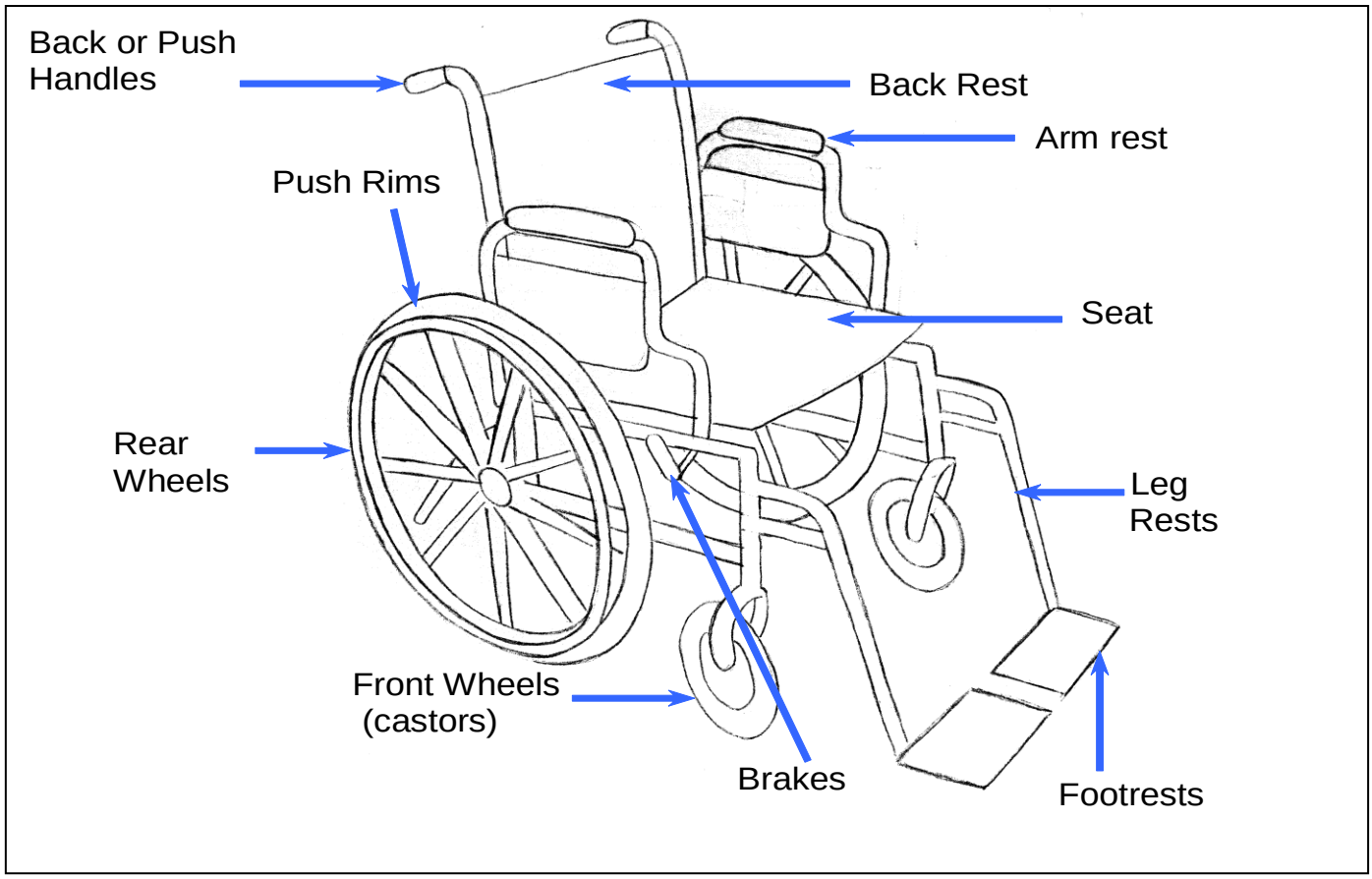
V. Acknowledgements……..Pg 17

VI. How to contact us……Pg 18

I. INTRODUCTION

Like cars, there are many different types of wheelchairs. Each type has a different purpose. This guide will tell you about using a standard wheelchair. If your wheelchair has special adaptations, you will want to go over these with your therapist.

II. PARTS OF THE WHEELCHAIR



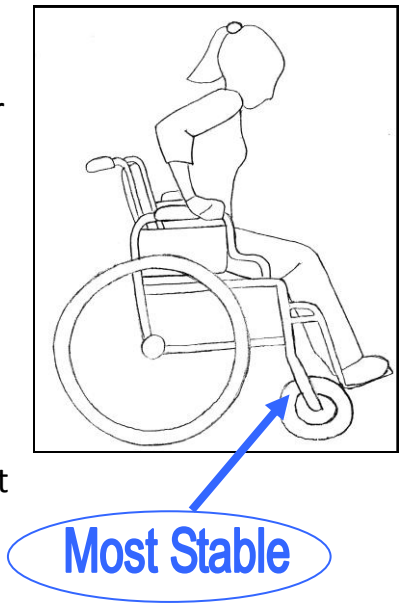
- **Antitippers**:
    - These aren't shown in the picture.
    - They are small wheels on the back of your wheelchair near the bottom to keep it from tipping over backward.
    - Keep the antitippers on most of the time. They can get in the way sometimes when going backwards down a steep slope, so make sure you know how to remove them.
- **Footrests**:
    - The footrests can be knocked out of place easily.
    - To fix them, use a wrench to loosen the bolt on the side of the bar going to the footrest.
    - Your footrests should fit comfortably when you are sitting on a cushion.
    - There should be about 2 inches of room between the ground and the footrest.
- Make sure you know how to put on and take off the foot rests, armrests and antitppers, and how to fold the wheelchair.

III. USING YOUR WHEELCHAIR

A. Keeping from tipping over or falling out of the wheelchair:

❖ **Helpful Hints**

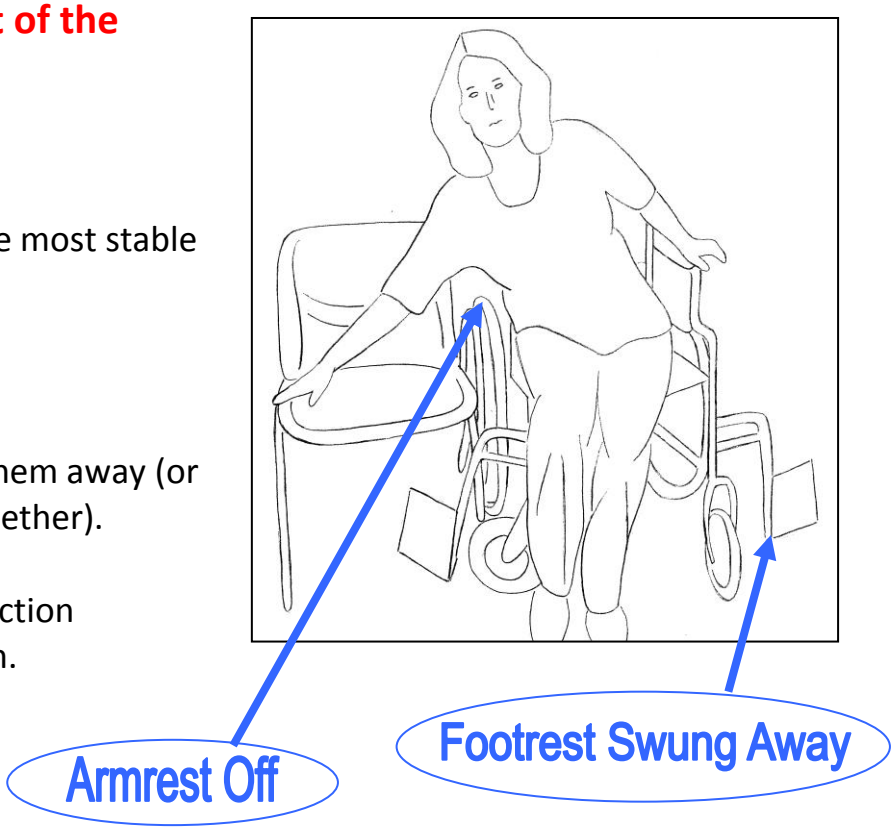
- When going uphill, lean forward to avoid tipping over backward.
- When going downhill, lean back to avoid falling forward out of your wheelchair.
- Make sure the antitippers are in place.
- Point the front wheels forward when getting in or out of the wheelchair -- this is the most stable position.



B. Transferring into and out of the wheelchair:

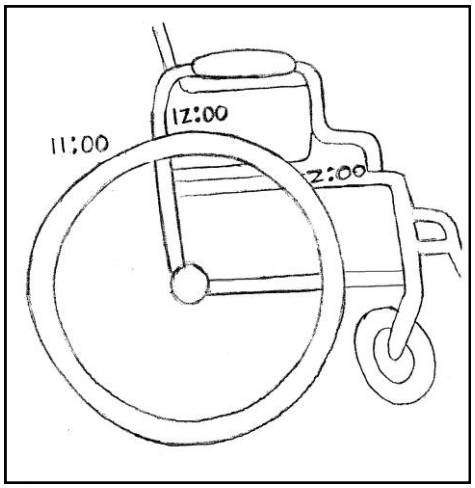
❖ **Helpful Hints**

- Make sure the wheels are in the most stable position.
- Make sure the brakes are on.
- Raise the footrests and swing them away (or even better take them off altogether).
- Take off the armrest in the direction you are going to or coming from.



C. Pushing the wheelchair on flat surfaces:

1. By yourself:



- Forward: Start with your hands at 11 o'clock, then move them forward to 2 o'clock. Repeat.
- Backwards: Just reverse the forward process.
- Turning: Push on the wheel on the opposite side of the way you want to turn. Hold the wheel still on the side towards which you want to turn.

2. By a helper:

- Forward: The helper will use the back (push) handles to push the wheelchair forward.
- Backward: The helper will use the back (push) handles to pull the wheelchair backward.
- Turning: The helper should push harder on one of the handles (for a tighter turn, pull back on the other handle).

❖ Helpful Hints

- Hang on to a corner with one hand while pushing on the opposite wheel to help turn the corner.

D. Dealing with inclines and uneven surfaces:

As everyone since Columbus knows, the world isn't flat. There are doors to get through, curbs to mount, and lawns to cross. Your wheelchair can help you with all of these, once you learn some special skills.

Crossing a threshold or obstacle

1. **Backward with or without a helper**:

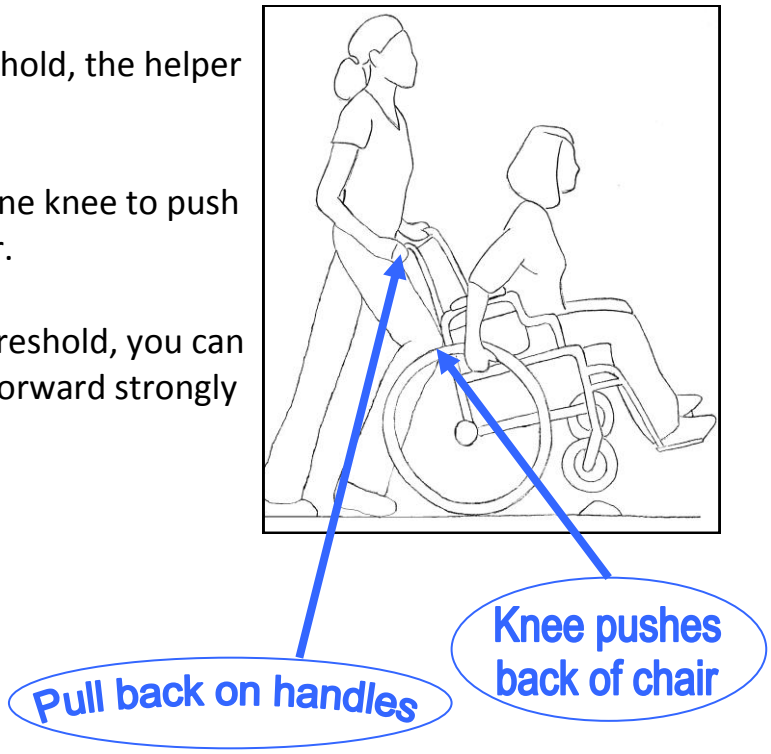
- It is easier and safer to go over a threshold backward, but of course then you can't see where you are going (so look first).
- Then, back up until the rear wheels are against the threshold.
- Lean forward and push back strongly on the rear wheels (or have your helper pull back strongly on the back handles).
- Once the rear wheels are over the threshold, lean back to help get the front wheels over the threshold.

2. **Forward by yourself**:

- For a threshold of any size, you will need to "pop a wheelie."
- Ask your therapist if it is safe for you to do.

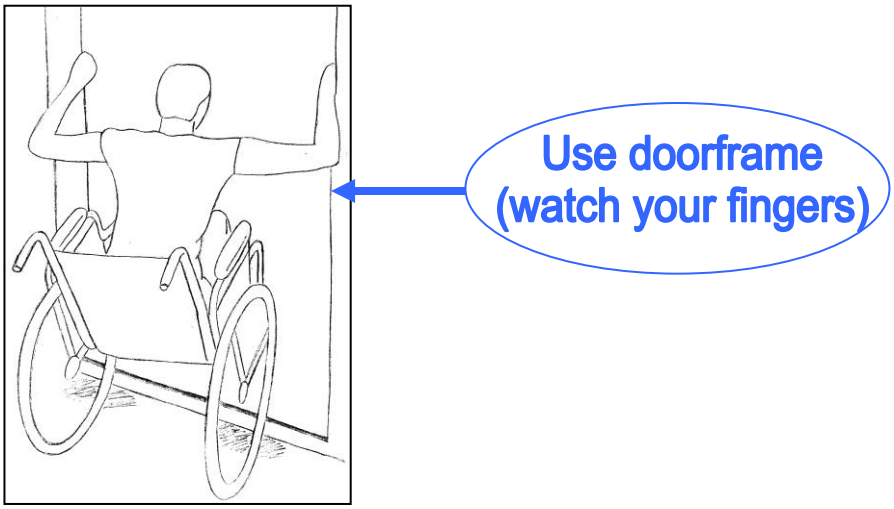
3. Forward with a helper:

- To get the front wheels over the threshold, the helper should pull back on the rear handles.
- At the same time he/she should use one knee to push forward on the back of the wheelchair.
- Once the front wheels are over the threshold, you can help by leaning forward and pushing forward strongly on the rear wheels.



❖ **Helpful Hint**

- Try pulling on the doorframe (watch out your fingers don't get caught between the door and the doorframe).



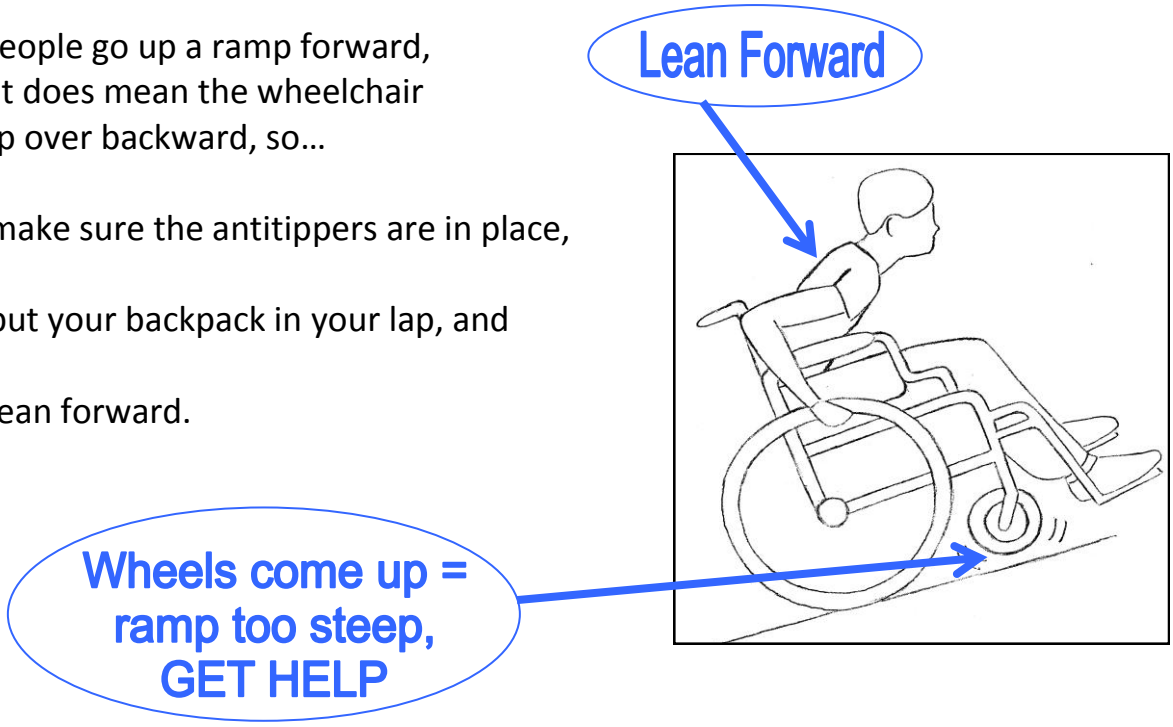
Ramps

Ramps are there to help people using wheelchairs, but that doesn't mean they are easy to use.

When going up a ramp

1. By yourself:

- Most people go up a ramp forward, but that does mean the wheelchair can't tip over backward, so…
    a. make sure the antitippers are in place,
    b. put your backpack in your lap, and
    c. lean forward.



2. With a helper:

- Go forward up the ramp.
- Your helper should push you using the back (push) handles.
- You can help by leaning forward and pushing on the wheels at the same time.

❖ ***Helpful Hints:***

- If your front wheels lift off the ramp or hill, it is too steep for you to go up alone – get help.
- If you need to rest while going up a hill or ramp, turn sideways to the slope.
- If you use your feet to help propel the wheelchair, try going up backwards!
- If you push up hills often, ask your therapist about a hill-climbing device to stop the wheels from rolling backward between pushes.

When going down a ramp:

1. By yourself:

- Use your hands to put pressure on the rear wheels to slow the wheelchair down.
- For extra safety, you may want someone to walk alongside and just in front of the wheelchair.

2. With a helper:

- Your helper should hold onto the push handles and pull back to reduce your speed.

❖ ***Helpful Hints***

- There are 2 main risks going down a ramp – falling forward out of the wheelchair and losing control of the wheelchair, so….

    a. Shift your weight back when going down hill.

    b. Wear a seat belt.

    c. Going slowly will help you keep control of the wheelchair.

    d. Be careful your footrests have enough clearance at the bottom of the ramp, because if your footrests catch it could tip you over.

Curbs

Going up a curb:

1. **By yourself**:

- Most people will want help getting up a curb. If you want to learn how to mount curbs by yourself, you will need to learn how to "pop a wheelie." Ask your therapist if this is something you can do.

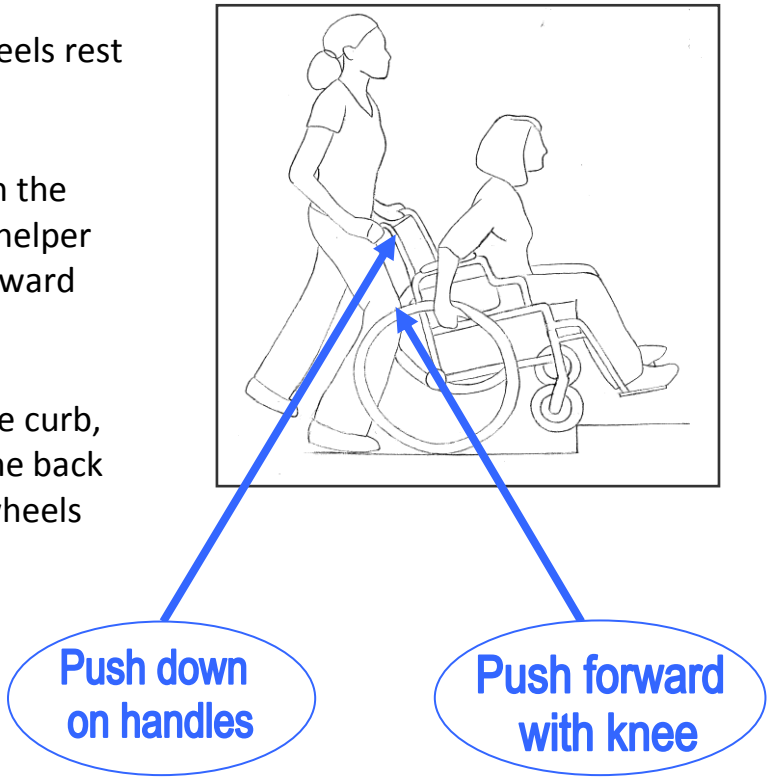
2. **With a helper**:

- Roll forward until both front wheels rest against the curb.

- The helper should push down on the handles. At the same time, the helper should use one knee to push forward on the back of the wheelchair.

- Once the front wheels up on the curb, then the helper will lift up on the back (push) handles to lift the rear wheels up onto the curb.

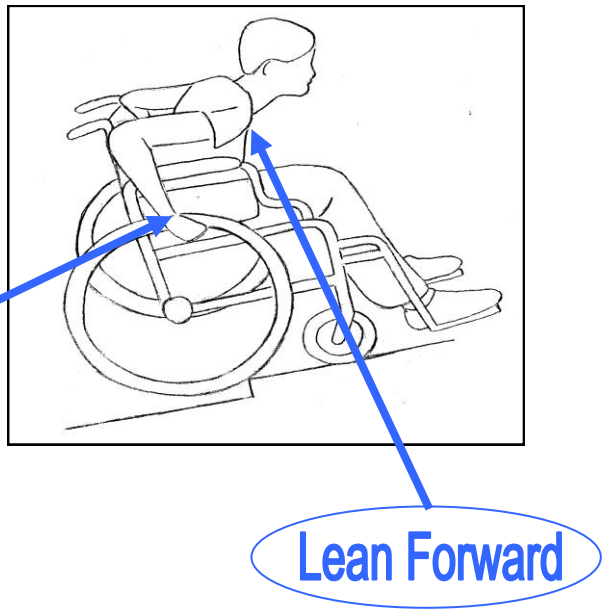
- Once the front wheels are over the curb, you can help by leaning forward and pushing on the rear wheels.



Going down a curb:

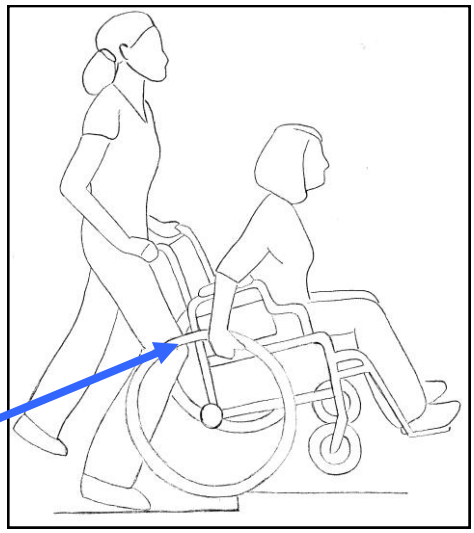
1. **By yourself**:

- Most people will want help getting up a curb. If you want to try it yourself, it is best to go down backward. Hold on to the rear wheels and lean forward to slow the chair down.



2. **With a helper**:

- Your helper can use his/her knee to brace the wheelchair.
- Or he/she can stand sideways and use his hip to help brace the chair (being careful to protect the back by not twisting at the waist).
- The helper should take small steps backward easing the wheelchair to the ground.
- The helper should not release the chair until all four wheels are in contact with the ground.



❖ ***Helpful Hint***

- If you go forward down a curb instead of backward, use a seatbelt!

E. Transportation

Using public and private transportation with a wheelchair can be a challenge. But with a little thought and planning you will still be able to use most forms of transportation.

❖ *Helpful Hints*

- Cars: Take off the footrests and armrests. Fold the wheelchair. If it is still too heavy to lift or too large to fit in your car, ask your therapist about a wheelchair lift to attach to the car.

- Buses and trains: Public buses and trains with wheelchair lifts should be available by law. Contact your public bus system. If you are traveling by train, make a reservation ahead of time letting them know that you use a wheelchair.

F. Doorways, tight turns, and small spaces

Doors

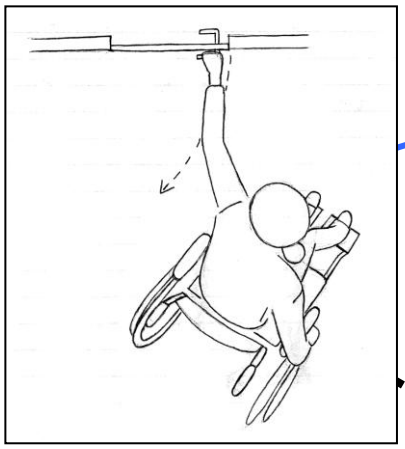
❖ *Helpful Hints*

- One of the hardest parts of going through a door is opening it, because the wheels tend to roll instead of giving you something to brace against. Try any of the following to make it easier:

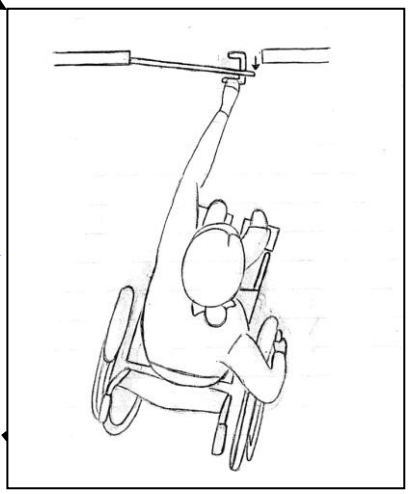
    a. Adjust the tension on the door (how strongly the door closes) to make it easier to open. Ask a handyman to help you with this.

    b. Use your footrests to help push open the door.

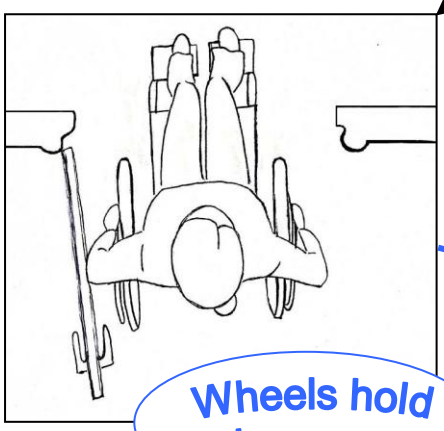
    c. A level type handle will be easier for you to open than a round handle. You can get different types of handles at most hardware stores.



1. Move wheelchair around door.



2. Back up as you pull door open.



Wheels hold door open

3. Swing around and enter the doorway.

Tight spaces

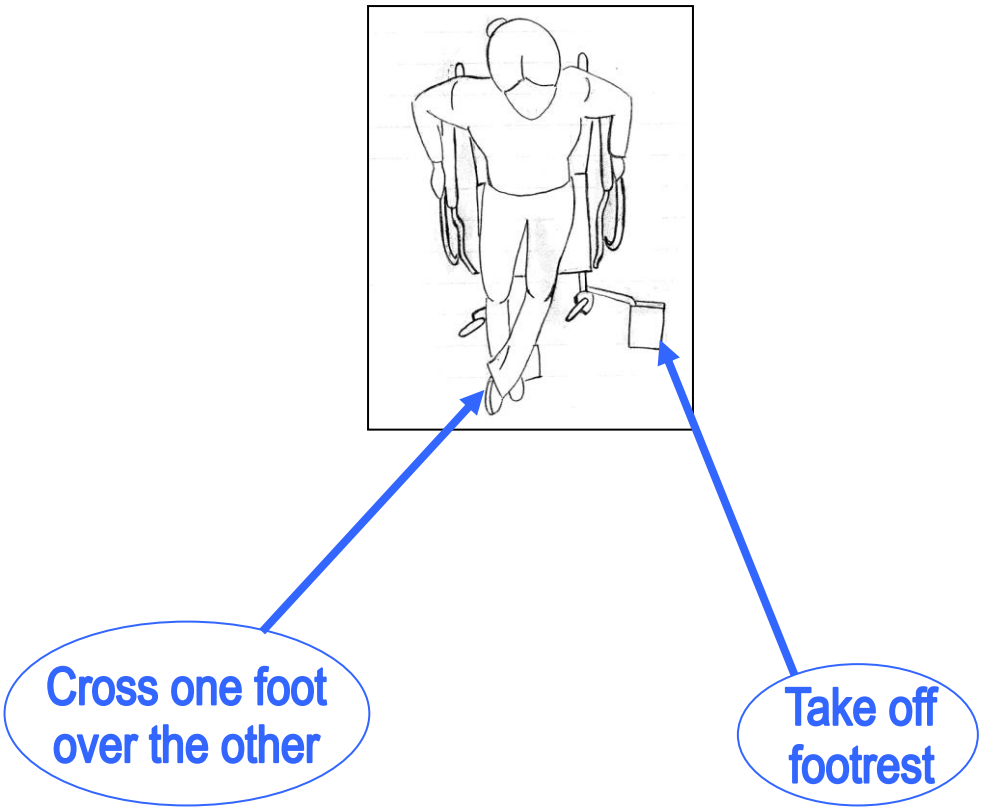
❖ *Helpful Hints*

- Take off your footrests. This makes the wheelchair shorter so it takes less space. Even taking off one footrest and crossing that foot over the other will help (take off the footrest in the direction towards which you want to turn).

- Back in -- then you will have more maneuverability inside.

- To turn into a doorway from a narrow hallway, try going past the door and backing in.

- Getting into a car - Take off the footrest closest to the car -- this will let you to get closer.



IV. PRESSURE SORES ("BED SORES")

If you are in your wheelchair for more than 1 or 2 hours at a time, you could get a pressure sore. You can prevent a pressure sore by shifting your weight while in the wheelchair -- in other words, "*take a load off*" from time to time.

❖ *Helpful Hints*

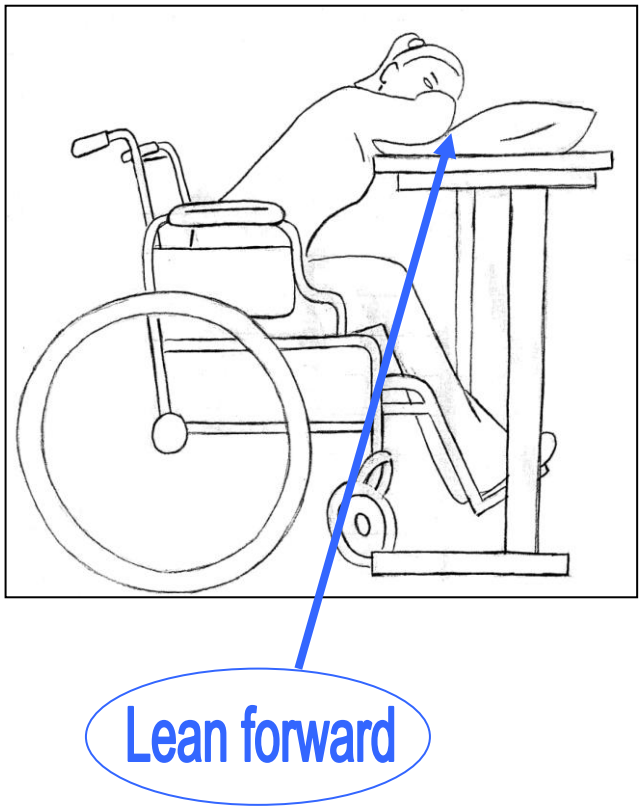
- Try any of the following every 15-20 minutes to prevent a pressure sore:

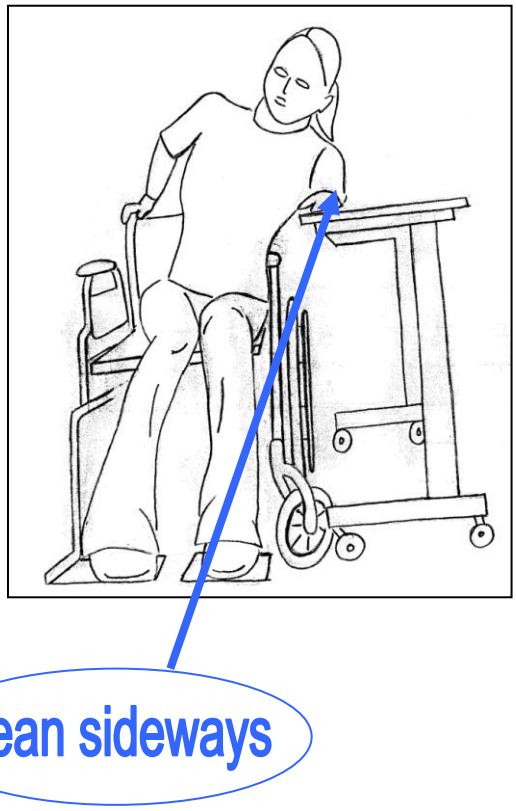
  a. Lean side to side.

  b. Lean forward onto a table or your knees.

  c. Lift yourself off the seat by doing a push-up on the armrests of the wheelchair.

  d. Stand up.





V. ACKNOWLEDGEMENTS

Text:

- Written by: Dr. Helen Hoenig with editorial assistance by Christy Cone and Michelle Morgan.

- Inspired by: the book, *The Manual Wheelchair Training Guide* by Peter Axelson, Denise Yamada Chesney, Jean Minkel, and Anita Perr and the Dalhousie University website, www.wheelchairskillsprogram.ca/fre/videoclips.htm.

Illustrations:

Provided by Michelle Hiatt, Michelle Morgan, Nancy Pahel, Kevin Caves, and Katie Apibunyopas.

Funding:

Support to help develop this guide was provided by the National Institute on Disability and Rehabilitation Research, RERC on Wheeled Mobility, Grant #H133E030035-04 & National Institute of Health, National Institute on Aging, Claude D. Pepper Center, Grant #5PGOAG11268.

Publication:

Hoenig H, Pieper C, Zolkewitz M, Schenkman M, Branch LG. Wheelchair users are not necessarily wheelchair bound. J Am Geri Soc 2002; 50: 645-54.

VI. HOW TO CONTACT US

For general questions, concerns, or to make an appointment, contact the Physical Therapy & Rehabilitation Service (PM&RS):

Rehabilitation Services (Room B2010)
Durham VA Medical Center
508 Fulton Street
Durham, NC 27705
Telephone: 919-286-6874 (or) 1-888-878-6890 ext. 6874
Office hours: 8:00 AM – 12:30 PM; 1:00 PM – 4:30 PM

Created by:
Helen Hoenig, MD, MPH and Other Contributors (Pg 17)
Durham VA Medical Center
Physical Medicine and Rehabilitation Service
Approved by VEM Committee
FOG Level 6.0
October 2012
VEM # 0060