

The Fundamentals of Evidence-based Wheelchair Training for International Contexts

Video Script

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**** This video script needs to be used with the Master Document, as the references correspond with this script.***

Note: Special attention was paid to the CDC’s “Scientific and Technical Information: Simply Put”; Doak CC, Doak LG, and Root JH’s “Teaching Patients with Low Literacy Skills”²; and DeWalt & Pignone’s voicethread titled “Health Literacy 101: Defining the problem and what we can do about it”³.

I. Introduction

Hi! I’m (your name), (then define who you are).

Today we will be talking about wheelchairs and how to use wheelchairs safely. Whether you are a new or old wheelchair user this video will help *you*! If you are a parent, family member, or caregiver of a wheelchair user, this video will help you too.

II. Wheelchairs

1) What are wheelchairs used for?

Wheelchairs are used to help people:

- Do everyday tasks- like cleaning up, getting dressed, or eating.
- Go outside and to the store.
- Go to work and school.
- Play and grow.
- Sit upright and stay healthy.

(Show video examples (see images below) of wheelchair users performing some of these tasks.)

Fig. 1.1. User at work



Fig. 1.2. User at school



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2) Who uses wheelchairs?

Wheelchairs are like legs. They help people who cannot walk or who have trouble walking *move!* Some people can move a wheelchair by themselves and some people need help from others. Some people may need a wheelchair because they are not safe walking and could fall. Some people may need a wheelchair because they get tired quickly. In Turkey, a lot of people use wheelchairs everyday, kids and adults at school and work.

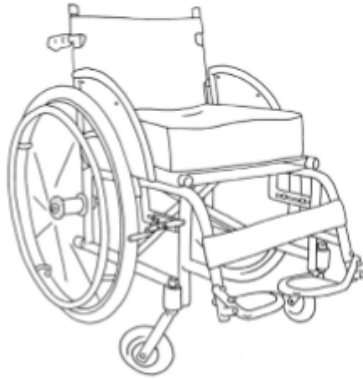
3) Types of Wheelchairs

There are two types of wheelchairs, manual wheelchairs and power wheelchairs.

Manual

Manual wheelchairs can be pushed with your arms or your feet or can be pushed by your family. (*Show a manual wheelchair*)

Fig. 1.6. Wheelchair designed for long-term user



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Power

Power wheelchairs use a battery and are moved by pushing a knob with your hand. (*Show a power wheelchair*)



Standard, Custom, & Special Features

Manual and power wheelchairs can be standard or custom (*use culturally appropriate words for standard and custom*).

Standard wheelchairs should only be used for a short time because the seats are not stable or solid. Using these wheelchairs for a long time could cause bad things

like sores or changing the shape of your body (*show standard wheelchair and point out the floppy seat and back*).

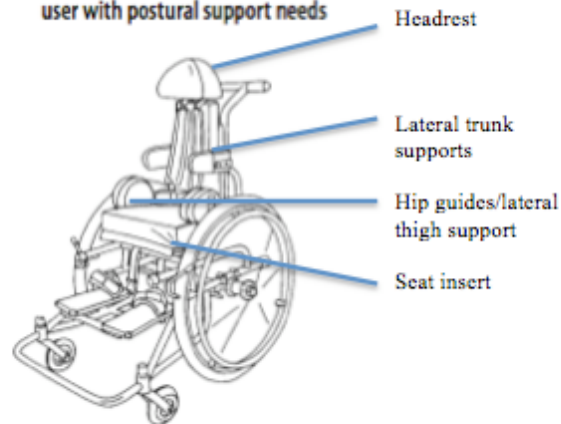
Fig. 1.5. Wheelchair designed for temporary user



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Custom wheelchairs can be used for a long time. These wheelchairs are comfortable and made for your body. (*Show custom wheelchair and how it is special to the wheelchair user's body- highlight lateral supports, headrest, and hip guides*).

Fig. 1.7. Wheelchair designed for user with postural support needs



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Some wheelchairs can tilt back or recline (*show and demonstrate tilt-in-space and recline*). The tilt back wheelchair has the whole seat tip backwards while you are still sitting in the chair. The recline wheelchair is when the seat can lean back like you were going to lay down. Tilting back and reclining help you to get your weight off your bottom and be more comfortable.



Tilt-in-space



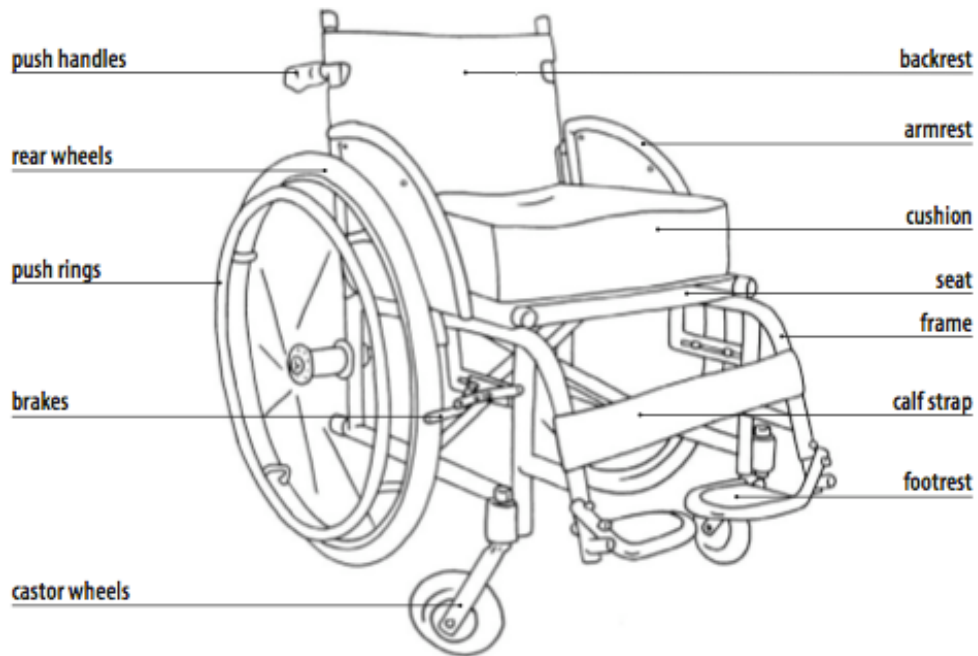
Recline

4) Parts of Wheelchairs

There are many parts to a wheelchair. We will show you the most important parts of a manual wheelchair and what they are used for.

(Show a manual and/or power wheelchair and point out the following parts)

Fig. 2.1. Example of a manual wheelchair and its parts

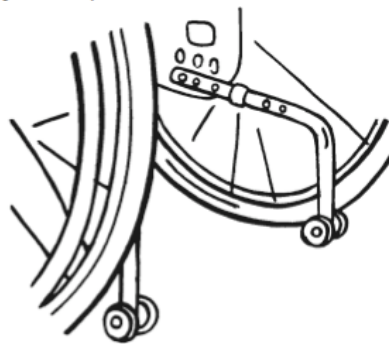


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- **Cushion-** A cushion is used for comfort, support, and to decrease pressure on your bottom.
- **Backrest-** A backrest helps you to sit straight up.
- **Armrests-** Armrests help you to stay in your chair and can be used to push on when getting into and out of the wheelchair.

- **Footrests-** Footrests are to put your feet on.
- **Brakes-** Brakes are used for safety. The brakes need to be locked when you are getting into or out of your wheelchair. There is one brake on each wheel that can be pushed into the wheel to lock the wheelchair in place.
- **Rear wheels-** Rear wheels are used to move your wheelchair.
- **Push rims-** Push rims are where you put your hands to push the wheelchair.
- **Castor wheels-** Castor wheels help the wheelchair steer and turn.
- **Push handles-** Push handles are where a helper can put their hands to push the wheelchair.
- **Seat belt-** A wheelchair seat belt is for your safety, like a car seat belt. It will stop you from falling out of your wheelchair.
- **Calf strap-** The calf strap helps your feet stay of the footrests so they don't fall into the wheels.
- **Rear anti-tippers-** Rear anti-tippers help stop your chair from falling backwards.

Fig. 2.3. Anti-tip device



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Now you know the parts of the wheelchair. Let's talk about the importance and safety of wheelchairs.

(You could include a quick quiz of wheelchair parts here. For example- showing a wheelchair, pointing to a part and having the audience give answers.)

III. Safety

1) Benefits of Wheelchairs and Custom Seating

If you have trouble walking or cannot walk, there are many good things about wheelchairs. The best is that you can MOVE more! Before using a wheelchair, going from the bedroom to the bathroom may have been hard to do. Before using a wheelchair, you may not have been able to go to town, to school, or work (*use the appropriate Turkish word for town, school, and work*). Now, using a

wheelchair makes things like moving from the bedroom to the bathroom or going into town, much easier. Wheelchairs allow you to do more and be involved!

Custom wheelchair seating has many good things compared to standard wheelchair seating. Custom seating in a wheelchair is made for your body's specific needs. Standard wheelchair seating is the same for everyone. Custom seating helps you with the things you do everyday, like playing with your toys and friends, getting dressed, eating, reaching, writing, going to school, and going outside. Custom wheelchair seating also helps you to stay in the right position throughout the day. This will help you to be more comfortable and stop sores on your body.

The right way to sit in your wheelchair is to have your bottom touching the back of the seat and to have your seat belt on. You should be sitting **upright** with a straight back and hips. There should be a little space between you and the side of your wheelchair and behind your knees. Sitting upright *will help you do the things you do everyday and help prevent you from getting hurt.*

(Show more video examples (see images below) of wheelchair users performing everyday tasks.)

Fig. 5.2. Good quality of life



Fig. 5.3. Active participation



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Fig. 5.1. Living with dignity



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2) Risks of wheelchair use

Risks of wheelchair use include:

- Tipping and falling
- Injury
- The wheelchair not working correctly
- Body changes
- Pressure sores

Tipping or falling in the wheelchair could happen when going over curbs, running over something or reaching for something that you dropped on the floor. Of all wheelchair-related injuries tipping and falling happen the most.

Your arms can also be hurt if you use them too much for pushing your wheelchair. *It is important to take rests for your arms.*

Wheelchair use can also lead to changes in your body shape, such as your legs being stuck in a sitting-like position. You can stop this from happening by stretching and changing positions at times.

Pressure sores can also happen because of sitting all the time in a bad cushion or position. We'll talk about this some more.

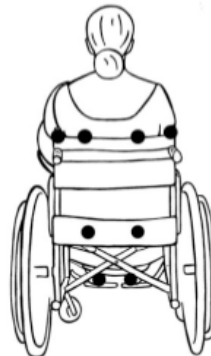
3) Pressure relief

A pressure sore is a wound that comes from having your body push on the same spot for a long time. Common places to get pressure sores are on the bottom, the sides of the knees, elbows, heels, and where the wheelchair touches the top of the back. *(See picture below and point out pressure sensitive areas on a person).*

Fig. 2.5. Common pressure sensitive areas (side view)



Fig. 2.6. Common pressure sensitive areas (back view)



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If you have a red spot on your skin that does not go away after 30 minutes of not sitting on that spot, then you may be beginning to get a pressure sore. Here is what a pressure sore looks like in the beginning:

(Show a picture of an early stage pressure sore- red spot on skin)

And here is a picture of how a pressure sore can get worse:

(Show a picture of a late stage pressure sore)

Ways to prevent pressure sores are:

- A good wheelchair cushion
- Custom seating
- Good wheelchair maintenance
- Pressure-relieving techniques

Everyone who uses wheelchairs should use pressure-relieving techniques often. Watch these pressure relieving techniques and then let's try them together:

(Demonstrate forward weight shift, lateral weight shift, push-up pressure relieving technique, tilt-in-space, and recline → see explanations in master document)

(Along with the demonstration of each technique give these verbal instructions)

- 1) Forward weight shift: A forward weight shift is the best choice for someone with weak arms or pain in their arms. You should lean forward and rest your belly on your legs. Another way is to lean forward while holding onto the back of your wheelchair.
- 2) Side weight shift: To do a lateral weight shift lean to one side while pushing up on opposite armrest.
- 3) Push-up: To do a push-up pressure-relieving technique just push down on armrests with both arms and raise bottom off the seat.
- 4) Tilt back or recline: A family member can tilt the chair back or you can do a wheelie. We will talk about wheelies later.

Use one of these every 10 to 20 minutes for at least 2 minutes to help prevent sores. If you cannot do any of these techniques by yourself then you should have someone help and you should spend some time out of your wheelchair on your stomach or side a few times a day.

4) Importance of quality in chairs

Quality of a wheelchair is important in order for a wheelchair to last a long time and be safe. A quality wheelchair is made of strong equipment and is made for your body's needs. Wheelchairs are used all day on roads, dirt, and in houses. If they are not quality, they will break quickly. Poor quality and broken wheelchairs are not safe and lead to accidents and getting hurt. We want you to be safe in your wheelchair.

5) Repairs or Discharge

To be safe with wheelchair use, whenever a part breaks it should be fixed quickly. Who you got your wheelchair from should tell you where you could get your wheelchair fixed in your community.

You should stop using your wheelchair if you do not feel safe. You should also stop using your wheelchair if there are big changes in your body that cause the wheelchair to not fit -- like growing, getting heavier, or having surgery.

6) Maintenance

Taking care of your wheelchair will make it last longer, be safer, and work better.

(Show this chart on the screen with verbal text below. Then demonstrate each maintenance procedure)

	Weekly	Every 3 months	Every 6 months	Yearly
Check tire air	X			
Check brakes	X			
Check cushion		X		
Check tightness of screws, footrests, casters, and anti-tippers		X		
Check armrests and frame			X	
Wheelchair provider do maintenance				X

To take care of your manual wheelchair you should:

- Each week check air in tires and if brakes work.
- Every 3 months look at cushion, fabric, and tightness of screws, footrests, casters, and anti-tippers.
- Every 6 months look at armrests and frame.
- Once a year have the person who gave you the wheelchair do maintenance.

Some maintenance tips are:

- The amount of air to put in the tires will be written on the side of the tires.
- Use a hand pump to fill the tires with air.
- Batteries need to be charged everyday for 8 to 12 hours.

- Do not tighten the screws too much or use the wrong tools because this could make the screws not work.

7) Cleaning

Cleaning is an important part of taking care of your wheelchair. The right way to clean your wheelchair is to:

- Use warm water to hand wash the frame and upholstery.
- Let the upholstery air-dry.
- Clean the moving parts of the wheelchair with a damp cloth to remove dust.
- Be sure to dry the wheelchair completely.

The wrong way to clean your wheelchair:

- Putting the upholstery in the washer machine or dryer. This could mess up the upholstery.
- Putting grease on the moving parts of the wheelchair because grease can make dirt and hair stick. This will cause the wheels to not work well.
- Leaving the wheelchair wet because this could cause it to rust.

IV. Wheelchair use

Now that you know some background information on wheelchairs and how to take care of them, next we will learn how to use wheelchairs.

1) Transfers

Before getting into your wheelchair, you need to know how to get out of bed. To get out of bed, roll on your side, push up with your arms and bring your legs off the side of the bed. Another way to get out of bed is to bend your legs up so your feet are flat on the bed, push up with your arms, and turn your bottom so your feet fall off the bed.

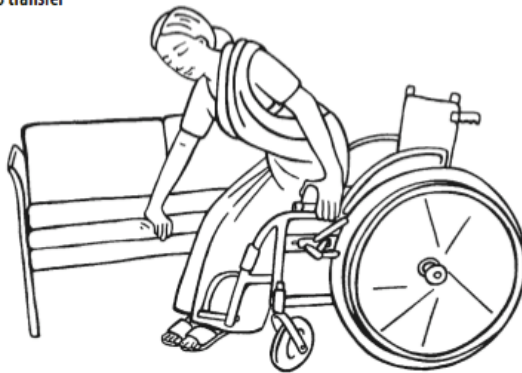
(Demonstrate these two techniques for getting out of bed as described in the Master Document)

Now, we must learn how to get into and out of your wheelchair. There are many ways you can do this, but will teach the 3 most common. Safety advice for all of these methods includes locking your manual wheelchair brakes before moving into or out of your wheelchair. Also for safety with any of these methods, if a family member or caregiver is helping, they should use a safety belt around the wheelchair user's waist.

(Demonstrate an independent and dependent stand-pivot transfer, transfer board transfer, and crouch transfer as described in the Master Document AND with demonstration include comments below)

- Stand-pivot transfer: Set the wheelchair up, lock the brakes, push up on armrests to stand up and swing your bottom to other chair. (*State slowly with demonstration*)
- Transfer board transfer: Set wheelchair up right next to chair, remove armrest, lean towards other arm rest to make space under your bottom to place to transfer board, place transfer board so it makes bridge between the wheelchair and chair, push down on wheelchair and transfer board and move bottom towards chair, keep doing this until across the transfer board into the chair, then lean to one side to remove transfer board. (*State slowly with demonstration*)
- Crouch transfer: Set wheelchair upright next to chair and remove armrest. Push down on wheelchair like you are going to stand up, but don't stand up, and move your bottom towards chair. Continue to do this until in the chair. (*State slowly with demonstration*) (*Picture below shows crouch transfer*)

Fig. 2.15. Easy to transfer



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The stand-pivot and crouch transfer can be used to get into and out of a car. Before getting into a car, push the car seat back as far as it goes to make it easier. Also, do not grab the door to help you get into the car because it could close on you and hurt you.

If you are a family member or caregiver helping a wheelchair user go from one surface to another you must protect yourself by using safe lifting techniques.

(Demonstrate one transfer with safe lifting techniques and then state safe lifting techniques below)

Safe lifting techniques include:

- Bend at your knees, not your back
- Keep your back straight
- Do not twist your back
- Keep wheelchair user's weight close to your body
- Encourage the wheelchair user to help as much as possible

These safe lifting techniques are important for all transfers, but are really important if the wheelchair user needs help moving from the floor to their wheelchair. You need two people to help. One person stands behind the user and one person stands next to the user's legs. The user crosses their arms on their belly. The person standing behind reaches under the user's armpits and holds onto their arms. The person standing next to the user's legs puts one arm under the upper part of the legs and one arm under the lower part of the legs. Both helpers lift the user at the same time to move the user from the floor to the wheelchair.

(Demonstrate two-person dependent transfer from floor to wheelchair as described in Master Document while stating the verbal cues written above).

2) Wheelchair skills

Now we will learn about wheelchair skills. It is important to learn and practice the following wheelchair skills with the help of another person to make sure you are safe. Do not do a wheelchair skill if you or a family member feels unsafe. Get help from a trainer if you feel unsafe. Practice will make you better and safer at these wheelchair skills.

(Demonstrate ALL wheelchair skills as described in the Master Document. The comments below are verbal suggestions you could use with demonstrations.)

Removing armrests

- Press the small lever at the front of the armrest and swing the armrest back OR press small levers at the front and back of armrests and pull straight up to take off the armrest.

-

Removing leg rests

- Unlock the leg rests; swing away to the side and then lift straight up to remove. To put leg rests back do the opposite.

Propulsion

a) Manual

- Forward movement: To move forward hold push rims with both hands slightly behind the shoulders, with thumbs facing forward. Push wheels and lean forward while straightening arms. Let go of wheels slightly in front of shoulders. If your hands start to hurt, you can wear wheelchair gloves.
- Backward movement: Make sure nothing is behind you. Hold push rims with both hands in front of the body, lean forward, and then pull backwards at the same time.
- Moving the wheelchair with only one arm and leg (*Hemiplegic propulsion*). The wheelchair seat height will be lowered so the leg can reach the floor. The leg does the work to move, steer, and stop the wheelchair. To move the wheelchair with the leg, kick out the leg and

place it on the floor and then pull back. The arm can be used to push the push rim. The other arm and leg can rest on the wheelchair on the arm and leg rests.

Turning

a) Manual

- Wide turn: Slow or stop movement with one hand, while pushing faster with the other hand.
- Sharp turn: Hold push rim in front of you with one hand and behind you with the other hand. Then push/pull in opposite directions at the same time.
-

Wheelie

a) Manual

- Wheelies are a hard and dangerous skill to learn. However, when you learn this skill you will be able to do more things in the community. Only learn and practice this skill with a trainer. To do a wheelie hold the push rims next to your shoulders and move the wheelchair backward slowly, then quickly move the wheelchair forward while slightly leaning back. To stay in a wheelie you have to relax and hold the push rims lightly. If you are falling forward move the wheels forward, if you are falling backward move the wheels backwards. To bring the wheels back to the ground lean forward or move the wheels backwards.

Doorways

a) Manual

- Wheelchair user:
 - o Through an open door: Place your hand on the doorframe and the other hand on the door and pull yourself through the doorway.
 - o Door that opens away: Pull up close to the door, open the door and push it, then go through doorway.
 - o Door that opens towards: Pull up next to the door, open door, push wheelchair into doorway and keep going through.
- Caregiver: When going through doorways caregivers should be sure that the wheelchair user keeps their hands on their lap and elbows by their sides to prevent injury.
 - o Door that opens away: Caregiver should open the door and pull wheelchair backwards through doorway by push handles.
 - o Door that opens towards: Caregiver should angle user away from the door, then open door and hold open with body while pushing wheelchair forward through door by push handles.

Ramps

a) Manual

- Wheelchair user:
 - Going up a ramp: Lean forward so the wheelchair will not tip backwards. Short, quick strokes or long strokes could be used to push wheelchair forward. If the wheelchair starts rolling backwards, you should grab just one push rim with your hand. This will make the wheelchair turn sideways and stop. If you grab both push rims the wheelchair could tip backwards.
 - Going down a ramp: To go down a ramp facing forward lean back in the wheelchair and go slowly. Put your arms on the push rims in front of you and push down some to slow the speed. To go down a ramp backwards lean forward and go slow.
 - A wheelie can also be used to go down a ramp. Pop a wheelie before going onto the ramp, then move onto to ramp in a wheelie and go down ramp. Push down on push rims to keep a slow speed and to go faster don't push down as hard on the push rims. Get out of the wheelie after you are off the ramp.
 - *(It is up to the video developers discretion whether or not to include this, as this is an advanced skill.)*
- Caregiver
 - Going up a ramp: Caregiver should bend knees and put hands on the push handles to push wheelchair forward up ramp.
 - Going down a ramp: Caregiver puts hands on the push handles and pushes the wheelchair forward slowly down ramp.

Curbs

a) Manual

- Wheelchair user:
 - Going up a curb: If it is a small curb, roll up to the curb and keep pushing and leaning forward until on the curb. If the curb is bigger, do a wheelie to get onto the curb. Get into a wheelie near the curb, then roll up to the curb and let the castors be put on the top of the curb. Push fast while leaning forward until on the curb.
 - Going down a curb: A forward wheelie is the best way to go down a curb. While getting close to the curb pop into a wheelie, roll forward in wheelie to the edge of the curb; slowly push the wheels until they hit the ground. If you cannot to do a wheelie or feel unsafe, you can go down a curb backwards. Roll to the edge of the curb backwards and make sure you stay straight. Lean forward and push down on push rims to go slowly. When the rear wheels are on the ground, turn the wheelchair so the castors come to the ground.
- Caregiver
 - Going up a curb: The caregiver should lean the wheelchair user into a wheelie near the curb, push forward so the castors are placed

- on the curb, have the user lean forward while caregiver pushes forward and upward until rear wheels are on curb.
- Going down a curb: Caregiver will pull wheelchair user backwards to the edge of the curb. Then the user will lean forward while the caregiver slowly pulls the wheelchair backwards until rear wheels hit the ground. Then the wheelchair can either be tilted back into a wheelie or turned sideways in order to lower the castors to the ground.

Stairs

Going up and down stairs is difficult, only a few people who use wheelchairs do this. You get out of your wheelchair to go up and down stairs, so you need to be strong. You should not go up or down stairs unless there is no other choice.

a) Manual:

- Going up and down stairs- Wheelchair user: To go up stairs by yourself move the wheelchair next to the stairs. Lock the brakes and take off the footrests. Move your body from the wheelchair to the second or third stair. To go up a stair push up on each step with your arms and legs while bending over to move your body to the next step. Keep doing this until at the top of the stairs. Have someone carry the wheelchair up the stairs for you. To go down the steps do the same thing.
- Going up and down stairs- Caregiver: Ideally two to three caregivers would help. The wheelchair user should wear a seat belt if available. To ascend stairs, the caregivers will back the wheelchair up to the first step, tip the wheelchair into a wheelie, and roll the wheelchair up one step at a time. One caregiver will be behind the wheelchair with their hands on the push a handle so they can pull the wheelchair to roll up each step. The second/third caregivers will hold the front of the wheelchair frame to make sure the user does not fall out of the wheelchair. To go down the steps do the same thing.

Emergency skills

a) Falls

- Backward: If you are falling backwards, bend your neck down so you don't hit your head on the ground. Put your arms in front of your face so your knees don't hit your face.
- Forward: If you are falling forward, curl up into a ball and put your hands over your head. Do not try to catch your fall on the ground with your arms, because you could break your arms.
- Sideways: If the wheelchair is tipping sideways, lean the other direction and keep your hands close to your body.

b) Getting up from falls

- Turning: Sit in front of wheelchair sideways. Push down on the seat so you are on your knees facing the wheelchair. Then push down on seat with both hands and turn body to sit in the wheelchair.

- Push-up: Sit with your back facing the chair and lock the brakes. Put your hands behind you on the seat rails and push down to try to move your body up to the chair. If this is too high, you can use a stool to go half way.

V. Conclusion

Today you have learned about your wheelchair and how to use it. This is just the start; you will need to practice with the help of a trainer. Wheelchairs are great things and they will help you a lot. We are excited that we have been able to spend time with you. Have fun out there!

References

1. Centers for Disease Control and Prevention. Scientific and Technical Information: Simply Put, 2nd edition. Atlanta, GA; April 1999.
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3. DeWalt D and Pignone M. Health Literacy 101: Defining the problem and what we can do about it. University of North Carolina-Chapel Hill Department of Medicine. <http://unc.voicethread.com/?#q.b984634.i5249042>. Lecture delivered by McCulloch K.