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## MOBILITY ALTERNATIVES:

### From Canes to Wheelchairs



A publication of  **United Spinal  
Association**

Jean Minkel, MA, PT

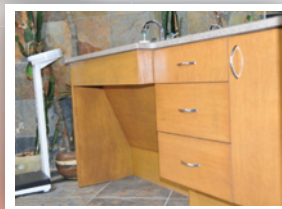
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# Mobility Alternatives:

## From Canes to Wheelchairs

Jean L. Minkel, MA, PT

How you get around has a big impact on what you can do and where you can go.

Simply being able to take a few steps can be a huge advantage for getting around your home. Some people are able to use the narrow confines of the bathroom to their advantage, holding on to the sink, walls, or grab bars. Counters may offer some support when standing or walking in the kitchen. But once you venture past the front door, there are no walls for support and your lifestyle will likely require long distance mobility to do what you need to do, be it shopping, visiting family or friends, attending school, or going to work.

Many people who have lived with a disability for a long time have found that careful consideration of their mobility needs has been a key to their independence. For some, the solution has included multiple devices—different environments, different devices—a manual wheelchair in the home, a scooter for work, and even a handcycle for exercise.

Mobility assistance equipment comes in many forms, shapes, and sizes. The options include:

- **Assistive Devices for Ambulation:** These are simple devices to help you walk—a cane, crutches, and walkers.
- **Manual Wheelchair:** Essentially, a chair with wheels designed to allow you to self-propel or be pushed along by a companion or an attendant.
- **Power Assist Devices:** These are mechanical devices installed on manual wheelchairs to make it easier for the user to self-propel.
- **Scooters:** Most are three-wheel designs, although some four-wheel models are available, usually with an electric motor, and a tiller for steering. A scooter is an effective mobility device that does not look like a wheelchair.
- **Power Wheelchairs:** Front-wheel, mid-wheel, and rear-wheel drive options are available. These chairs operate by an electric motor and are controlled by using a “joystick,” or an “alternate control” device. Many offer multiple seating options, including power seating.

## Be an informed consumer.

Ask other users about their experiences. Ask lots of questions. Mobility assistance equipment is often purchased through a third party, such as medical insurance, Medicare/Medicaid, the Department of Veterans Affairs, or vocational rehabilitation programs. Each payer has their own set of “coverage criteria” and a system for purchasing. As you explore the options, keep in mind that all of these products can also be purchased directly. If you have the resources, a private purchase can offer greater selection at less than the manufacturer’s suggested retail price and there is no need to wait for an “authorization.” You may also find it helpful to consult an experienced health care provider.



Many occupational and physical therapists also specialize in assistive technology and there are rehab technology suppliers who specialize in individualized fittings and repairs. Ask other users, they’re often a great source of information for locating people in your area who may be able to help you.

“My physical functioning was unchanged, but my mind and my world had finally opened up. With the scooter, I could get around again. And I loved the freedom.” In her recent article, *When Walking Fails*, Dr. Lisa Lezzonni eloquently articulates the challenges facing people who need mobility assistance. Speaking from personal experience

as a woman with multiple sclerosis, Lezzonni explains that, after many years of assisted ambulation, first with one cane and then with two canes, she decided to try a scooter.

## Adding a wheeled mobility device to your options is a lot like looking for a new car.

There are so many options and choices. How can you begin to make an informed decision? To be truly happy with your choice over time requires some homework up front. There is no one “best chair.” The best chair is the one that allows you to go where you want to go, when you want to go! To find it, you need to consider the environments you’ll be in and what you’ll be doing. Some users have no choice about using a chair—it is the only form of mobility available to them. For others, a wheelchair may be “augmented mobility,” allowing for longer distance travel without fatigue or fear of falling.

# Options to think about.

## Do your homework!

**Mobility Needs**—Careful consideration of what you want to be able to do will help focus your choices. As noted earlier, the process is similar to buying a car: you must prioritize your functions to identify the features you'll need. You may come to the conclusion that more than one device is, ultimately, what you need. Many users have come to this conclusion and they add different devices over time. Meet your top priority needs first; later you can purchase additional gear to accommodate different environments.

An important first consideration is: where will you have the most trouble getting around? If ambulation, even with an assistive device like a cane or a walker, is not an option, then you will be a full-time wheelchair rider. If walking around your home or other small spaces is not a problem, then you may be only looking for equipment to increase your community mobility or allow you access to recreational and leisure activities.



### **You need to review your requirements in each environment—home, community, and work/school/volunteering activities.**

- **Home:** Critical features of the wheelchair will affect your ability to transfer (getting in and out of the chair). What is the height of the seat from the floor? How does that height compare to your bed, for example? How do the armrests or foot supports move to make your transfer easier? What is the overall width of the chair? Will it fit through your doorways?
- **Community:** How do you want to travel in the community? Do you need to fold the walker when riding in the car? If you are using your arms or your legs to propel a manual wheelchair, will you get too tired just getting to the store or to visit friends?

Would a power option (power assist wheels, power chair or scooter) provide a more efficient method of getting around? Are there sidewalks and curb cuts or are you “sharing the road” with cars and trucks? Do you want to be in the great outdoors—trails, grass, gravel? Or are you a “mall walker”—preferring smooth finished floors and wide open doorways?

Your choice of tires, wheels, and type of base can make a world of difference getting around the store versus hitting the trail.

- **Transportation:** Where you live and what your transportation options are will have a major impact on your choices. Public transportation—buses or trains—are increasingly accessible for wheelchair users, providing you want to go where the bus is going. Private transportation, (i.e., owning your own vehicle), gives you the most flexibility and freedom, but fitting your mobility device into the car will present a series of questions. Can the chair or scooter fold? Can you store it in the trunk or within the car? Can you get it in the trunk and then walk to the car door? Many wheelchair and scooter users find that a van or a minivan—especially one adapted with a ramp or lift—is a the real key to independent mobility. But modified vans are expensive. For many people, they are just not an option.

## Options for Ambulation Aids

- **Cane or walking stick:** The key here is getting the cane fitted to the right height. Ideally, when you hang your arm by your side, your hand should hang just over the top of the cane, your wrist lining up with the very top of the cane. An adjustable cane is easiest for ensuring the correct height, but if you are a long-time user, you may choose a custom cane, cut to your specific height, or even a walking stick to add a little style. When you grasp the top of the cane, your elbow should bend at about 30 degrees. If you are using a cane because of weakness on one side of your body, place the cane in the hand of your stronger side.
- **Crutches:** There are basically two types of crutch styles—under the arm (auxiliary) or cuffed to the forearm (Lofstrand or Canadian crutches). A proper fit and some instruction on safe use is important. Seek the assistance of a health care provider when first using crutches. Long-time crutch users have found the style tip (the rubber tip on the bottom of the crutch) and the grip style for your hand can add to overall comfort for long-term use.
- **Walkers:** Walkers are currently available in many styles—pick-up walkers, which have no wheels; sliders, which have small skis or tennis balls on the rear legs; or “rollator” walkers, which employ four wheels. Some walkers use three wheels, are triangular in shape, and offer somewhat





less support, but are not as bulky; four-wheel walkers are primarily designed for indoor use. More robust walkers that employ four larger wheels and a full basket are also available and may even include a fold-down seat.

## Styles of Wheelchairs and Scooters

Broadly speaking, there are three categories of products that are referred to as “wheeled mobility devices”—manual wheelchairs, scooters, and power wheelchairs. As mentioned previously, many long-time wheelchair-users have several of types of chairs, with each chair functioning differently in different environments.

### Manual Wheelchairs

Manual wheelchairs are designed for two very different purposes: to allow the user to propel himself or herself, or allow a companion or an attendant to push the chair.

“Dependent/transport” mobility bases, which are not designed for self-propulsion, often have small rear wheels and may look and function much like a stroller. For transport purposes, these chairs often fold compactly to store in the trunk of a car and provide “light duty” mobility. You may find a transport chair is a convenient “back-up” to your primary chair, easily folded when not needed, but readily available if your chair breaks down.



**“Specialty positioning” bases are mobility devices** that allow for

changes in positioning by tilting the seating system, reclining the backrest, or both. These devices are not easy to transport, but they are designed to provide comfortable, full-day seating for users who may be unable to propel themselves or operate a power wheelchair.

Self-propelling manual wheelchairs are equipped with a large wheel and riders self-propel using either both arms, both legs, or one arm/one leg. If you are using your leg(s) for propulsion, then the seat-to-floor height is a critical parameter to insure maximum mobility.

The most active manual wheelchair-users are able to balance the chair on the back wheels alone—a maneuver known as a “wheelie.” This can significantly improve access for the user. By “popping a wheelie” you can negotiate a high threshold, get over a two-inch curb and, if you are able to

ride in a wheelie position, you may be able to cross soft terrain like grass and gravel without the front casters getting stuck. Manual chairs with adjustable rear wheels (i.e., wheels that can move forward and backward on the frame) need to be fitted to the user to get the best combination of “tippiness,” or ease of popping a wheelie, and stability, which is not tipping over when just pushing on the wheels. If you have good balance and want to learn to do a wheelie, ask for training from your physical or occupational therapist.

## Power Assist

One of the newest technologies offer hybrid or “cross-over” products—equipment that falls between traditional manual chairs and power wheelchairs. The power-assist systems are equipped with new wheels (the larger rear wheel for a manual wheelchair) that are battery operated and designed to increase the number of revolutions the wheel makes per push. The goal is to increase the efficiency of manual propulsion while reducing the effort that the rider must exert on the wheels. Add-on power systems are designed to give power chair operation while mounted on a manual wheelchair base. With a quick release system, these add-on power systems are more easily transportable than traditional power chairs, but do not have the long-term performance or durability of traditional power chairs.



The internet provides a great opportunity to explore product options before ever going to a wheelchair clinic or a medical store showroom. Each manufacturer has a Web site describing their product line. Major manufacturers include Invacare, Permobil, Pride Mobility, and Sunrise Medical. Other valuable resources include:

- **[www.usatechguide.org](http://www.usatechguide.org)**—Large database of available products by category and wheelchair user reviews
- **[www.wheelchairjunkie.com](http://www.wheelchairjunkie.com)**—Consumer direct information regarding commercial products and a wheelchair users forum
- **[www.resna.org](http://www.resna.org)**—Provides a directory of therapists, assistive technology practitioners (ATP), and suppliers (ATS) who specialize in rehab products.
- **[www.nrrts.org](http://www.nrrts.org)**—List of suppliers, by state, that specialize in rehabilitation products



# Wheelchair Type Advantages and Disadvantages:

	Advantages	Disadvantages
<b>Manual Wheelchairs</b>	<ol style="list-style-type: none"> <li>1. Lightweight</li> <li>2. Greater reliability</li> <li>3. Easier to transport</li> <li>4. Less expensive</li> <li>5. Provides exercise</li> <li>6. Easier to overcome accessibility problems</li> </ol>	Self-Propulsion: <ol style="list-style-type: none"> <li>1. Possible secondary complications after long-term use such as sore shoulders, wrists, and elbows</li> <li>2. Requires physical effort to be mobile</li> </ol>
<b>Scooters</b>	<ol style="list-style-type: none"> <li>1. Aesthetics—does not look like a wheelchair.</li> <li>2. Increases mobility range without increased exertion</li> <li>3. Swivel seat may allow for easier transfers in and out of the seat</li> </ol>	<ol style="list-style-type: none"> <li>1. More complicated to transport in a car than a manual chair</li> <li>2. Needs charging</li> <li>3. Less flexible modifications to meet changing physical conditions than a power chair</li> </ol>
<b>Power Wheelchairs</b>	<ol style="list-style-type: none"> <li>1. Greatest mobility range with least exertion</li> <li>2. Easier to modify over time, if needed</li> <li>3. Available power seating options (i.e., tilt and/or recline)</li> </ol>	<ol style="list-style-type: none"> <li>1. More expensive</li> <li>2. More difficult to transport</li> <li>3. Less reliable than manual wheelchairs.</li> </ol>

## Conclusion

Purchasing a wheeled mobility device is not a simple matter. Much like a car, there are also aesthetic considerations. What is the image you want to project? Also, as in buying a car, you need to be practical. Many a “soccer mom” would love the two-seater, convertible roadster. Too bad there’s no room for the kids. Function often trumps fantasy.

Both our self-image and the functions we need to perform in our everyday lives change over time. Eventually, you may have different priorities and thus “move” from one type of mobility device to another. But always do your homework. Ask others about function, reliability, and personal experiences. With routine maintenance, and a little tender loving care, you can stay mobile for years to come.

**Get out there. Check out the options that can take you where YOU want to go!**

### **Mission Statement**

United Spinal Association is dedicated to improving the quality of life for all Americans with spinal cord injuries and disorders.

### **About Us**

For over 60 years, we have fought for veterans' rights and for the rights of all individuals with disabilities. We played a significant role in writing the Americans with Disabilities Act, and made important contributions to the Fair Housing Amendments Act and the Air Carrier Access Act.

Our initiatives in research and education, government policy and legislation, civil rights and advocacy, accessibility and architectural design, and competitive athletics ensure that veterans and all Americans with spinal cord injuries and disorders live healthier, more independent, and productive lives as active members of their communities.

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Jean L. Minkel, MA, PT, is an educator and master clinician widely recognized for her expertise in assistive technology. She currently directs Minkel Consulting, a company providing educational and consulting services to clinicians, consumers, manufacturers and payers. She is the author and director of the videotape series, *Spending or Investing: Funding Assistive Technology* and co-author of *A Guide to Wheelchair Selection* and *The Manual Wheelchair Training Guide*. Ms. Minkel has over a decade of experience in seating and mobility service delivery to clients of all ages and has lectured extensively in the United States, Canada, Europe, and China.



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