



# WHEELCHAIR SEATING AND POSITIONING



Figure 1: Photo Courtesy of Permobil

For people living with paralysis, wheelchairs provide access to a wider world. The ability to build a rich life—whether cooking dinner, socializing at a neighborhood barbecue or meeting deadlines at the office—expands with independent mobility. Understanding how to assess individual needs, navigate insurance and choose a wheelchair that supports an active life are key first steps towards a fulfilling future.

## Q: What are the main types of wheelchairs?

Wheelchairs are either manually operated or electronically powered devices used to

aid mobility. Manual wheelchairs are self-propelled, so being able to use one will depend on upper body function. Injuries below, and sometimes at, the C6 level can generally sustain the movement needed for this chair. Weight, age, strength, trunk stability and overall fitness are other factors to consider. Manual wheelchairs are classified as lightweight (less than 34 lbs.) or ultralight (less than 30 lbs.) and are available in foldable or rigid frames. An add-on accessory known as a 'power assist' can be attached to manual wheelchairs in order to convert to motorized operation when needed. Power wheelchairs are the best option for individuals unable to self-propel or who are concerned about repetitive injury or strain on shoulders and arms. The lower part of the chair holds the motor, batteries and electronics that power the device. These chairs offer a variety of driving systems, including front, rear and mid-wheel drive; how and where the chair will be used, along with any previous experience using a power chair, should be considered when assessing which driving system is the right fit.

### **Q: What is a seating clinic? Why should I go?**

Seating clinics can help people with disabilities determine what equipment or seating system best fits individual needs. Typically, physiatrists, and occupational or physical therapists, will work with the equipment supplier to assess mobility function, measure posture and trunk stability and use pressure mapping technology and determine how to effectively support an individual's specific physical needs.

Understanding how physical outcomes are affected by different seats and wheelchair design can help prevent secondary conditions such as scoliosis and pressure sores. A comfortable chair can encourage and increase independence in the home, at school or work, and in social situations. Correctly matched equipment and seating can also improve respiration, blood pressure and bladder and bowel function. Lifestyle and the home environment will also be factored into the assessment, including considering how the chair might support independence in activities such as bathing, cooking and childcare. Possible challenges in and around the home, including narrow doorways, steep entrances, carpeted floors and gravel pathways, should be identified. Discuss how and where the wheelchair will be used, whether on public transportation en route to work or on grassy hiking paths for exercise. If caregivers will be regularly handling the wheelchair it will be important to make sure they can push, lift and maintain the chair. Many clinics also offer skills classes to help users become comfortable with new devices.

### **Q: How do I locate a seating clinic near me?**

Rehabilitation centers and hospitals typically offer seating clinics. When investigating local options, gather information about program specifics: Who are the

team members performing the evaluations and what are their qualifications? Additionally, have they received specialty training and certification in assistive technology or seating mobility from the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA)? Chose a clinic based on qualifications, rather than convenience.

### **Q: What is the process for getting a new wheelchair?**

The first step toward getting a wheelchair will be to ask your physician to gather relevant documentation to justify the device as a medical necessity. A face-to-face evaluation is mandated by Medicare. The resulting report should comprehensively describe prognosis, medical history and how mobility limitations interfere with daily in-home activities. The physician will then a letter of medical necessity to the approved equipment supplier. The letter, also called a 7-element-order, must include the patient's name, date of face-to-face evaluation, description of the device ordered, diagnosis as related to need for device, length of need, and physician's signature and date of completion; if any item is missing, approval will be denied. Medicare mandates that documentation of the face-to-face evaluation and letter be forwarded to the supplier within 45-days of the exam itself. (Follow up with your doctor 30-days after the evaluation to make sure the paperwork is submitted on time.) If you chose to visit a seating clinic, check to see if authorization is needed prior to scheduling an appointment; the clinic will include your chosen supplier at the appointment. Medicare requires suppliers providing power wheelchairs employ RESNA-certified staff who are directly involved in wheelchair selection. Suppliers or medical providers can also perform a home assessment to make sure the physical layout and floor surfaces are compatible with individual wheelchairs. This step is beneficial for anyone choosing a new wheelchair but is required for Medicare approval. Make sure both your provider and equipment supplier participate in Medicare or you will not be reimbursed. (Visit Medicare's website for a supplier directory searchable by zip code.) Power wheelchairs must be delivered by the supplier within 120-days of the face-to-face evaluation or another exam will be required. If you have private insurance, before beginning this process, confirm the specific evaluations needed, and which equipment suppliers are within your coverage plan.

### **Q: How can I get a wheelchair if I don't have insurance?**

The cost of wheelchairs can be prohibitive without insurance. But there are many charitable organizations and government-funded services that can help match individuals in need with donated and refurbished wheelchairs. Begin by reaching out to your state Assistive Technology Center. Funded under the Assistive Technology

Act and overseen by the Administration for Community Living, these centers work to increase the availability of assistive technology among people living with disabilities. Most offer device loan libraries, including long-term use of wheelchairs, or run device exchange message boards. The Pass It On Center at Georgia Institute of Technology maintains a searchable state-by-state database of programs that accept and distribute used devices. Some states also offer low-interest loan programs for the specific purchase of assistive technology. Also contact local Centers for Independent Living and Councils on the Aging to investigate wheelchair donation and distribution programs in the area. Vocational rehabilitation counselors, though focused on supporting independence through job training and placement, might be able to suggest community groups that can help. Local chapters of disease-specific organizations, such as the ALS Association, sometimes distribute or loan wheelchairs. National non-profits, including the Salvation Army, Easter Seals and Catholic Charities often work at the local level to provide access to wheelchairs for those in need. Cast as wide a net as possible to find resources.

### **Q: What kind of medically necessary accessories are found on wheelchairs?**

As defined by insurance plans, medically necessary accessories are those that are needed to function independently and perform everyday activities in the home. Wheelchairs are fitted with seat cushions, push rims (in manual chairs,) arm rests, backrests and footplates. Beyond these basic accessories, there are many customizable options depending on individual needs: a person who cannot use a standard joystick on a power wheelchair might require a sip and puff or foot control; an arm trough may be needed for people living with quadriplegia or who have uncontrolled arm movements; and a fully reclining back might be a medical necessity for those at high risk of pressure sores who are not able to shift weight independently. Chin or head controls, pelvic straps and shoulder harnesses can be matched to specific trunk and muscle limitations or spasticity issues. Positioning and skin-sensitive seat cushions may be required because of lack of sensation, history of pressure sores, or postural asymmetries. Since individual physical circumstance and function vary, there is no one-size-fits-all answer for what is necessary. Determine what additional supports you need with your medical team and, if possible, at a seating clinic; providing comprehensive documentation of what is medically necessary for daily activities is essential in order to gain insurance approval and reimbursement.

### **Q: How should I select a wheelchair for my child?**

Wheelchairs can transform the lives of children living with paralysis, encouraging

their social development and increasing independence in and outside the home. Medicare and Medicaid cover the cost of wheelchairs that are medically necessary, but these devices are expected to last about five years before replacement; this makes matching the child with the right wheelchair especially important. After a provider has performed a face-to-face evaluation to determine medical needs, families should consult with a seating clinic for a pediatric mobility evaluation. Posture, growth and functional ability are all factors to be considered while choosing the right chair for a child. Both manual and power wheelchairs are adaptable and able to grow with a child. The ability to actively play and socialize with peers is an equally important factor to bear in mind when choosing a child's wheelchair. Children who must be pushed in a manual chair are more passive participants in life than those who can propel themselves. The height of a seat can create distance and limit interaction with peers. A child using a manual wheelchair rather than a power wheelchair in school hallways or while out with friends may have to expend larger amounts of energy to keep up and engage less as a result. Speak with your child's medical team for input on what will best serve his or her physical and developmental needs, remembering that the overall goal is to build independent mobility.

*Sources: Model Systems Knowledge Translation Center, Kessler Foundation, Kennedy Krieger Institute, Shepherd Center, Rehabilitation Engineering and Assistive Technology Society of North America, Centers for Medicare & Medicaid Services, Administration for Community Living, National Assistive Technology Act Technical Assistance and Training Center, Massachusetts Assistive Technology Loan Program, Pass It On Center, Blue Cross Blue Shield, Cleveland Clinic.*

#### **Need to talk to someone?**

Our Information Specialists are available to answer your questions.

Call toll-free 1-800-539-7309 Mon-Fri, 7 am-12 am midnight EST.

Schedule a call or ask a question online at

<https://www.ChristopherReeve.org/Ask>

## **Resources for Wheelchair Seating and Positioning**

**The following are provided as information sources. The Reeve Foundation does not endorse any products, vendors or services and a listing here is not to be taken as an endorsement.**

**American Spinal Injury Association (ASIA): Guidelines for Use of Durable Medical Equipment for Persons with Spinal Cord Injury and Dysfunction**

<https://asia-spinalinjury.org/dmeguide22/>

ASIA offers a free download of their guide to DME. Various assistive tools are covered

including assistive technology, activities of daily living equipment, beds and mattresses, driving and transportation, lower extremity orthoses, respiratory dysfunction and management, sexual function and fertility, structural modifications, transfer devices, upper extremity orthoses, wheelchairs and seating, fitness, and sample letters of medical necessity.

### **Beach Wheelchairs from Deming Designs**

<https://www.beachwheelchair.com/>

Deming Designs, Inc.

78 East 9 Mile Rd.

Pensacola, FL 32534

Phone: 850-478-5765

E-mail: [office@debugmobilityproducts.com](mailto:office@debugmobilityproducts.com)

Information on Deming Designs' products which include beach wheelchairs, beach walkers, pool wheelchairs and accessories.

### **Braze Mobility**

<https://brazemobility.com>

Toronto, Canada

Phone: 877-272-9326

Email: [info@brazemobility.com](mailto:info@brazemobility.com)

Braze Mobility offers various systems which work with one's wheelchair to help those with vision issues. Their technology encompasses blind spot sensors, obstacle detections systems, proximity sensors, proximity alarms and alerts.

### **Craig Hospital: The Power Wheelchair**

<https://craighospital.org/uploads/Educational-PDFs/Model-Systems/342.Model-System-Power-Wheelchair.pdf>

### **eMedicine: Seating Evaluation and Wheelchair Prescription**

<https://emedicine.medscape.com/article/318092-overview>

This site provides information on wheelchair seating, including things to consider in evaluating equipment, and current funding trends and Medicare guidelines.

### **LifeTips: Wheelchair Tips**

<https://wheelchairs.lifetips.com/>

LifeTips has 217 wheelchair tips in 10 categories ranging from mobility scooters to wheelchair vehicles.

### **Mobility Advisor**

<https://www.mobility-advisor.com/>

Mobility-Advisor.com serves as an educational guide on wheel chair options, mobility aids, disability resources, and recreational outlets that enhance the lives of individuals of all ages who need mobility assistance.

### **MSKTC: Safe Transfer Technique**



<https://msktc.org/sci/factsheets/safe-transfer-technique>

MSKTC is a national center that works to put research into practice to serve the needs of people with traumatic brain injuries, spinal cord injuries, and burn injuries.

### **MSKTC: Gait Training After Spinal Cord Injury**

<https://msktc.org/sci/slideshows/gait-training-after-spinal-cord-injury>

### **MSKTC: The Wheelchair Series: What the Spinal Cord Injury Consumer Needs to Know**

<https://msktc.org/sci/factsheets/Wheelchairs>

### **National Registry of Rehabilitation Technology Suppliers**

<https://nrrts.org/>

5815 82nd St. Suite 145, #317

Lubbock, TX 79424

Phone 800-976-9787

E-mail: [aodom@nrrts.org](mailto:aodom@nrrts.org)

Members specialize in proper positioning and seating for improving safety and independence.

### **New Mobility Magazine Oct. 2017: How I got Medicare to Pay for My Smart Drive MX2**

<http://newmobility.com/medicare-pay-smartdrive-mx2/>

### **New Mobility Magazine Dec. 2021 Consumer Guide**

<https://newmobility.com/2022-consumer-guide/>

This issue reviews various power wheelchairs, wheelchair tires, and various accessories.

### **Operation Onward**

<https://operationonward.org/>

340 Commercial St.

Manchester, NH 03108

Toll-free: 844-576-1377

Email: [giving@operationonward.com](mailto:giving@operationonward.com)

A non-profit organization which works to provide innovative technology to people with disabilities including veterans and first responders injured in the line of duty. They provide funding to offset or fully eliminate cost as a barrier to access to these products.

### **Spinal Cord Injury Information Network: Rehab Tip Sheets**

<https://www.uab.edu/medicine/sci/uab-scims-information/rehab-tip-sheets>

A list of tip sheets for rehabilitation care providers and consumer caregivers offering step-by-step instructions and photo illustrations. The tip sheet on wheelchair positioning can be downloaded for free as a PDF.

### **Spinlife.com**

<https://www.spinlife.com/>

330 West Spring Street, Suite 303

Columbus, OH 43215

Phone: 800-850-0335

One of several websites that offer direct sales of durable medical equipment (including wheelchairs and cushions) to the consumer. Includes a helpful advisory function to determine needs.

### **UCP Wheels for Humanity**

<https://momentum4humanity.org/>

9509 Vassar Ave., Unit A

Chatsworth, CA 91311

Phone: 818-255-0100

E-mail: [info@ucpwheels.org](mailto:info@ucpwheels.org)

Wheels for Humanity collects used wheelchairs. Partnering with other relief and development agencies, they restore and distribute the wheelchairs at no cost to people who need them in places where wheelchairs are unattainable luxuries. Wheelchairs for Humanity works with community leaders in the villages and town of developing countries to identify those in greatest need of their help. With the assistance of a health care professional, a therapist and a rehab-seating specialist, each recipient is matched up with the wheelchair that best fits his or her needs.

### **United Spinal Association Wheelchair Reviews and Views**

<https://unitedspinal.org/wheelchair-reviews-views/>

This site provides reviews of wheelchairs and other assistive technology (scooters, cushions, standing technology). It also has features to help people find assistive technology, home medical equipment, adaptive recreational products and services and to submit questions or get advice on wheelchairs, mobility scooters, equipment and assistive technology.

### **Used Wheelchairs & Used Medical Equipment**

<http://www.usedwheelchairs.com/>

This site offers free classifieds for used wheelchairs and used medical equipment. The database can be searched by location and by type of equipment.

### **Wheelchair Foundation**

<http://www.wheelchairfoundation.org/>

3820 Blackhawk Road

Danville, CA 94506

Phone: 877-378-3839 (Toll-Free)

E-mail: [info@wheelchairfoundation.org](mailto:info@wheelchairfoundation.org)

The Wheelchair Foundation is a non-profit organization with a goal to provide a free wheelchair to every child, teen and adult worldwide who needs one, but has no means to acquire one.

### **Wheelchairjunkie.com**



<https://www.wheelchairjunkie.com/>

A resourceful and opinionated website owned and operated by self-described "power chair gonzo" Mark E. Smith, who also designs power chairs for Pride Mobility Products. Says Smith, "WheelchairJunkie.com is about mobility, not manufacturers, so the voices expressed here represent only users."

### **Wheelchairjunkie.com article on sports wheelchairs**

<https://www.wheelchairjunkie.com/types-of-sports-wheelchairs/>

Eight Different Types of Sports Wheelchairs

### **WheelchairNet**

<https://wheelchairnetwork.org/>

A federally funded virtual community for people who have an interest in wheelchair technology. Its purpose is to serve the information needs of anyone interested in wheeled mobility, though its primary audience is the person who uses a wheelchair. Lots of information here on every aspect of wheelchairs, including guidelines for choosing them. See their Wheelchair University section also.

### **Whirlwind Wheelchair International (WWI)**

<https://whirlwindwheelchair.org/>

Whirlwind Wheelchair International (WWI) is the communications hub of the Whirlwind Wheelchair Network of independent wheelchair-producing workshops in developing countries. Founded in 1989 as the Wheeled Mobility Center (WMC), WWI's primary mission is 1) to teach wheelchair riders in developing countries to design, build, and repair their own wheelchairs; 2) to enable rider/builders to create businesses for the manufacture and distribution of wheelchairs to others; and 3) to foster the ever-widening Whirlwind Network of rider/builders around the world who exchange ideas for the continuous improvement of wheelchair design.

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This publication is supported by the Administration for Community Living (ACL), U.S. Department of Health and Human Services (HHS) as part of a financial assistance award totaling \$10,000,000 with 100 percent funding by ACL/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by ACL/HHS, or the U.S. Government.