

## **Equipment**

There is so much equipment available for persons with spinal cord injuries that it can be very overwhelming. Having the right equipment can mean the difference between independently completing a task and needing someone do it for you. It is extremely important to choose the right equipment. The best way to do that is to consult a professional who has experience in rehabilitation technology.

It is important to realize that this chapter is only a guide. The resources listed are only a few of the ones available. Mention of specific organizations, sources and vendors does not constitute endorsement by the National Spinal Cord Injury Association or its Connecticut Chapter. However, this chapter is intended to provide information about commonly used sources for obtaining information and/or equipment.

### **Wheelchairs**

Selecting a wheelchair can be difficult due to the tremendous variety and options on the market today. Because everyone has individual needs, it is highly recommended that great care be taken when choosing a wheelchair. Try several types of equipment before making decisions and make sure that you choose experienced therapists and vendors to assist and educate you in this process.

The Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) have recently offered a credentialing exam for assistive technology service providers including both practitioners (therapists and doctors) and suppliers (vendors). Although this certification is relatively new and should not be your only consideration, it is one way to identify experienced professionals. Some insurances require that a person attend a clinic before purchasing a wheelchair or other seating equipment. A RESNA certified therapist is available at Connecticut Children's Medical Center and at Gaylord Hospital.

Clinics are also available to assist you in purchasing a new wheelchair or making modifications to the one you have now. Clinics in the area include:

1. Connecticut Children's Medical Center  
Washington Street  
Hartford, CT.  
(860) 545-8600
2. Gaylord Hospital  
PO Box 400, Gaylord Farm Rd.  
Wallingford, CT. 06112  
(800) REHAB x CHAIR or (203) 284-2875
3. Hospital for Special Care  
2150 Corbin Ave.  
New Britain, CT 06053  
(860) 832-6258

4. Lawrence and Memorial Hospital  
365 Montauk Avenue  
New London, CT 06920  
(860) 442-0711
5. The Rehab Center  
100 Deerfield Rd.  
Windsor, CT  
860-714-9500
6. The Rehabilitation Hospital of Connecticut  
490 Blue Hills Ave.  
Hartford, CT 06112  
(860) 714-3500

It is important to fully understand what your insurance will pay for. Always consult your case manager to determine your insurance's durable medical equipment benefits. Many payers will purchase a wheelchair only once every five years or only if there has been a significant change in your medical status. Hence, it is important to choose the correct wheelchair the first time and to make sure that the wheelchair lasts. The following information will give you some ideas in regards to wheelchairs and wheelchair maintenance.

Manual wheelchairs are self-propelled and designed for persons with adequate arm, hand and/or leg strength, endurance and balance to push the chair on various surfaces.

Electric or Power Wheelchairs have motors and are propelled using an electronic switch. Power wheelchairs are needed if the person does not have enough upper body strength, arm function, balance and/or endurance to safely or independently propel a manual wheelchair. A type of hand control or joystick operates most power wheelchairs. However, there are many other options available to propel the wheelchair including head controls, eye scan systems, sip and puff (breath controls) and even tongue-controlled systems.

There are numerous wheelchair-seating systems available to those who need assistance in maintaining correct and an upright sitting posture in the wheelchair. Good posture helps to conserve energy, prevent deformities, allow for adequate pressure relief, assist with skin maintenance, improve breathing, and allow better use of your arms and hands. Seating systems range from simple to complex, and should be assessed by an experienced professional. Positioning belts, solid chair backs, lateral supports, recliners, tilt-in-space, and cushions can all be a part of a seating system, but features are based on the individual needs.

Wheelchair cushions are essential in helping to prevent the formation of pressure sores. Cushions can also play an important role in good positioning. There are many brands and types of cushions that are usually air-filled, fluid-filled, gel-filled, foam, or a combination of materials. All cushions have both positive and negative aspects, and it is up to you and your provider to choose the best one for you.

Maintenance and repairs are as important with a wheelchair as they are with a car! Preventive maintenance and repairs will result in a properly functioning, safe, and long-lasting wheelchair. For more specific information, consult your owner's manual, warranty, therapist or your equipment vendor.

## **General Wheelchair Care**

Your wheelchair is an expensive piece of equipment and will require you to follow the maintenance instructions in the owner's manual. Here are some maintenance tips:

**Warranty:** Fill in the warranty information, make a copy for your records, and return the card to the manufacturer.

**Metal Parts:** Wipe off with a soft cloth at least once a week. Clean off any mud or debris. You may polish the metal parts with car wax.

**Upholstery:** Use tape to close small tears. This will prevent the tear from getting worse. Sponge with a damp cloth once a week. For solid backs, inspect hardware and attachments often and keep clean with dry cloth.

**Tires:** Clean occasionally with a damp cloth. If your chair has pneumatic tires, keep the correct amount of air in them (as per manufacturer's recommendations). Also, airless inserts are available which require no air and are long lasting.

**Large Wheels:** Occasionally tighten screws on the hand rims. Keep hardware free from dust and inspect for rust. Tighten wheel if it develops side-play. Make sure all wheel bearings are properly greased.

**Frame:** Grease extra long center bolt on the X-brace every two months. DO NOT oil hinges or clasps that control folding footrest or leg rest panel.

**Brakes:** Check brake action in all power chairs daily. Inspect manual brakes for rust or loosening attachments.

**Safety Hints:** Always replace or repair worn or missing parts. Make sure handgrips are always tight. Be sure screws holding upholstery are secure. Call your wheelchair vendor before attempting any repairs.

## **Braces and Orthotics**

The braces have many uses for the person with a spinal cord injury. Orthotics may allow a person with a spinal cord injury the ability to ambulate. The attending physician or physical therapist will recommend this activity, at the appropriate time.

Other orthotics such as body jackets can be used to help maintain an upright position. Splints can be used to help properly support both arms and feet. Furthermore, other braces assist with maximizing arm and hand function. All of this equipment must be maintained and properly cared for.

Custom orthotics are made by orthotists. Orthotists in the state of Connecticut need to be licensed through the state. An orthotist usually works in conjunction with a physician and/or therapist to provide the optimal bracing needs for those with spinal cord injuries.

**Plastic:** Clean once a week with mild soap and water. Call your therapist or orthotist if the plastic buckles in any area (this will happen most often at areas of highest stress).

**Metal Uprights:** Check for proper alignment. Uprights should never cause redness on the skin.

**Joint Mechanisms:** If your orthosis has a joint mechanism, keep it clean from dirt so that it maintains its ability to function.

**Velcro:** Replace when necessary or when it shows wear. Velcro does collect dirt and dust so keep clean. Close Velcro over itself when not in use to prevent dirt and dust collection.

**Skin:** Check your body each day for red areas after removing orthotics or splints. An unchecked red area can easily develop into an open sore.

**Repairs:** Contact the vendor for repairs on orthotics. Keep their phone number in an easily accessible location. Your therapist should also be able to repair a splint.

## **Ramps**

Ramps are necessary for getting into any building with stairs. The general rule is to build one foot of ramp for every one inch of height on the stairs. Landings should be at least five feet by five feet. Make sure the ramp has rails on both sides for safety. In choosing a carpenter, look for good references and knowledge of ramp building. Ask a lot of questions, and do not settle for vague answers such as “I do it the usual way”!

## **Bathroom Equipment**

Bathroom equipment ranges from something as small as a catheter to as large as a transfer-tub bench or a commode. The purchase of bathroom equipment should not be taken lightly, as it can be expensive and in some cases may not be covered by insurance. Discuss your needs, including your home environment, with a physician or therapist before making choices. Equipment can be purchased from medical supply stores, catalogs, equipment vendors or even local department stores. Please refer to the partial list of area vendors at the end of this chapter for more information.

## **Environmental Control Units**

Environmental Control Units (ECU's) electronically assist people who cannot independently access buttons and switches in their home or workplace. ECU's range in type and size, but are generally a single switch remote control for a number of objects. ECU's can open doors, answer or dial telephones, operate bed controls or home entertainment systems, control temperature and access computers. Mouth, head, voice, eye control or other parts of the body can activate the control switches.

Technology has evolved so much in recent years that it is difficult to give specific manufacturers. Contact you doctor, therapist or local vendor for more information.

## **On-line Information**

Currently, there are a number of web sites available for gathering information on the Internet. New online programs are simple to operate and should not be feared. Using the World Wide Web is a great way to collect the most recent data available.

ABLEDATA [www.abledata.com](http://www.abledata.com)  
1-800-227-0216  
8455 Colesville Road  
Suite 935  
Silver Spring, MD 20910

“ABLEDATA is a national database of information on assistive technology and rehabilitation equipment available from domestic and international sources.” The ABLEDATA website on the Internet contains information on more than 23,000 assistive technology products. You can do searches and be linked with other appropriate sites on the net.

Conecticut Tech Act Project  
Dept. of Social Services, BRS  
11<sup>th</sup> floor  
25 Sigourney St.  
Hartford, CT 06106  
860-424-4881  
<http://www.techact.uconn.edu>

United Cerebral Palsy Associations of New Jersey, Inc.  
E-Mail: [annettbart@aol.com](mailto:annettbart@aol.com)  
609-392-4004 x 530 (voice) 609-392-7044 (TTY)  
354 South Broad Street  
Trenton, NJ 08608

## FUNCTIONAL GOALS AND POTENTIAL EQUIPMENT FOR PERSONS WITH SPINAL CORD LESIONS

It is often through the use of assistive devices that independent function becomes possible. The following list of equipment is to serve as a **guideline** only in the determination of equipment needs of individuals with various levels of injury. Most individuals will not need all of the items listed. On the other hand, the individual may have specific needs not accounted for here. This represents only a summary of equipment considered reasonable for respective levels of injury.

<b>Functional Spinal Cord Level</b>	<b>Muscle Function</b>	<b>Functional Goals</b>	<b>Potential Equipment</b>
C4	Neck control Scapular	Manipulate electric wheelchair with appropriate controls.  Use of environmental controls.	Electric wheelchair  Elevator, Ramp Lightweight travel w/c  Mouthstick (for communication) Collapsible commode chair or bowel training wheelchair. Electric hospital bed. Over-bed table. Reading stand. Environmental controls. Patient lifter: car or home. Self-aid devices: mouthstick. Voice-activated computer.
C5	Partial shoulder control. Partial elbow flexion.	Independent in light hygiene and feeding activities w/ devices. Propel wheelchair with assistive devices. Swivel bar transfer. Adapted sports: swimming, archery, bowling.	Wheelchair with modification needed-possible power w/c. Roll-in shower/commode. Hospital bed-regular or electric with trapeze or swinging, straps. Patient lifter: car/home (if transfer not possible). ADL equipment Pushing gloves. Hand splints. Aids for feeding. Mobile arm support. Over-bed table. Overhead sling

C6	Shoulder control. Elbow flexion. Wrist extension. Supinators	Independent in dressing activities & transfer activities. Driving with adapted equipment. Adapted sports: track and field, table tennis.	Wheelchair modifications as needed. Shower/commode wheelchair Hospital bed trapeze. Transfer board for car. Self-aid devices. Functional splints, Leg-bag straps & clamp.
C7 & C8	Shoulder depression  Elbow extension Some hand function.	Independent in eating with adapted devices. Independent in application of condom drainage system. Independent transfers car, bed, commode chair and/or tub stool. Assisted bowel care.	Wheelchair with modifications as needed. Shower wheelchair. Possibly a hospital bed. Raised toilet seat, drop arm commode. Txfer tubbench Car transfer board. Standing frame. Self-aid devices. Leg-bag straps. Grab-bars around bathroom. ADL equipment

<b>Functional Spinal Cord Level</b>	<b>Muscle Function</b>	<b>Functional Goals</b>	<b>Potential Equipment</b>
T1-5	Normal upper extremity muscle function.	Total wheelchair independence. Independent transfer wheelchair to tub. Move from wheelchair to floor & back. Assisted standing activities. All wheelchair sports.	Wheelchair. Transfer tubbench, drop arm commode. Raised toilet seat. Standing frame. Grab bars around bathroom ADL equipment Sliding Board
T6-10	Partial trunk stability.	Exercise ambulation with bilateral leg braces & crutches Bathroom grab-bars.	Same as T1-5. Long leg braces or standing frame.
T11-L1	Trunk stability.	Possible household ambulation.	Wheelchair. Shower wheelchair. Raised toiler seat. Bracing for ambulation. Bathroom grab-bars.

L2	Hip flexors.	Limited ambulation.	Same as T11-L1
L3-4	Abductors, Quadriceps.	Community ambulation with long or short leg braces and crutches or cane.	Wheelchair. Bracing for ambulation. Shower chair. Bathroom grab-bars.
L5-S2	Hip extensors, and abductors. Knee flexors. Ankle control.	No equipment needed if plantar flexion is enough for push-off and there is no footdrop.	Ambulation aids.

The following is a partial listing of adaptive equipment vendors within the State of CT. This is not an all-inclusive list of vendors who supply equipment for individuals with spinal cord injuries. Please refer to your local telephone book for other companies within your area.

**Connecticut Vendors for Home Care/ADL Equipment and Rehab Technology**

ABC Medical  
203-316-0332

Advanced Home Medical Supply  
509 Farmington Ave  
Hartford, CT 06105  
860-523-1076

All Med-Health Care  
Rte 150, 314 Main Street  
Yalesville, CT 06492  
203-284-3443

American Home Patient  
150 Production Court  
New Britain, CT 06051  
860-223-8325

Apria Health Care  
40 Sebethe Drive  
Cromwell, CT 06416  
860-613-4900

Bassett Hearing Aid Center  
747 Farmington Avenue  
New Britain, CT 06053  
860-224-1617

Burke Medical Equipment  
950 Sullivan Avenue  
South Windsor, CT 06074  
800-669-9180

Connecticut Orthopedic Service  
942 New Britain Avenue  
West Hartford, CT 06110  
860-953-5480

Connecticut Rehab, Inc.  
11 Progress Circle  
Newington, CT 06111  
1-800-45-REHAB (457-3422)  
860-666-8888

Genox Homecare  
22 Shepard Drive  
Newington, CT 06111  
1-800-733-3613  
860-570-1010

Graeber Medical  
172 West Main Street  
Meriden, CT 06457  
203-235-0132

Hanger Prosthetic and Orthotics  
46 Wells Road  
Wethersfield, CT 06109  
860-529-3350

or

1000 Yale Ave  
Wallingford, CT 06492  
203-294-0750

or

46 Prince Street, Suite 201  
New Haven, CT 06519  
203-789-8570

Harvest Medical  
461 North Main Street  
Southington, CT 06489  
860-621-9166

Hudson Home Health Care  
151 Rockwell Road  
Newington, CT 06111  
860-667-4871

Kayes Home Health Care  
679 East Main Street  
Meriden, CT 06450  
203-237-8997

Lincare  
612B South Quaker Lane  
West Hartford, CT 06107  
860-236-4586

or

464 Pratt Street, Extension  
Meriden, CT 06450  
1-800-238-5946

New England Custom Rehab  
1879 Barmun Ave  
Statford, CT 06614  
203-375-2472

Pelton's Drug Store and Home Health Care Center  
100 Main Street  
Middletown, CT 06457  
860-346-3336

or

657 Silas Deane Highway  
Wethersfield, CT 06109  
860-529-6305

or

112 Main St.  
East Hartford, CT 06118  
860-569-0349

Professional Speech Aid Service  
20 Hartford Road  
Suite 30  
Salem, CT 06420-3800  
1-800-454-7778

Consignment shops are opening all around us-here are a few stores that might have what you are looking for.

Seniors in Motion of CT  
1-800-594-1225  
Motorized/manual w/c, 3-4 wheel  
scooters and other items for seniors (65+)

Special Needs Medical  
203-573-1555  
Consignment Store  
W/C, Assistive devices, Bathroom equipment

The following are equipment programs that are available to the public. These programs may be able to provide individuals with disabilities various types of mobility equipment. This equipment is at no cost to the person. Contact each program for individual needs.

Hospital for Special Care  
Special Care Equipment Exchange  
860-832-6259  
Contact person: Duncan Murdoch

“Seniors in Motion”  
(Available to both seniors and/or disabled individuals)  
\*Also provides free in-home evaluations  
800-594-1225

The following is a partial listing of resources for information on the following:  
car modifications, van rentals, ramping and licensing.

Airport Leasing, Inc.  
15 F International Drive  
East Granby, CT 06026  
860-653-6099  
Toll-Free: 888-334-7981  
W/C accessible van rentals  
American Ramp Systems  
1-800-649-5215  
Free home evaluation anywhere in US

Chrysler Crop Automobility Program  
1-800-255-9877  
Ford Mobility Motoring Program  
1-800-952-2248  
General Motors Mobility Program  
1-800-323-9935  
Rebates offered on adaptive equipment for their vehicles

CT Dept. of Motor Vehicle Handicapped Training Unit  
60 State Street, Rm 1093  
Wethersfield, CT 06109  
860-566-2208  
860-566-7717

Easter Seals Mobility Center  
PO Box 182, 158 State Street  
Meriden, CT 06450-0182  
203-237-7835 or 203-237-9187

Gaylord Hospital  
PO Box 400  
Wallingford, CT 06492  
1-800-64-REHAB

MK Battery  
1645 South Sinclair Street  
Anaheim, CA 92806-5929  
Free guide to educate people on scooter/wc/ batteries

Ride-away Corporation  
104 Pitkin Street  
East Hartford, CT 06108  
860-282-8202  
Toll Free: 888-495-9555  
Supplier of vehicles modifications

Wheelchair Getaways  
Accessible Van Rental Locations  
Western CT  
800-228-0185  
Serving all MA, RI, VT, Maine, NH  
800-727-1656

Wheeler Accessible Vans  
800-456-1371  
Rentals

