

HOME ACCESSIBILITY = GREATER INDEPENDENCE

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An important component of independence is the ability to get in and out of one's home and to be able to move easily and safely within it. Making changes within a home environment can improve one's independence and safety, enhance self-esteem and confidence, and facilitate access to the community. This can make the difference between a full, active lifestyle vs. a limited lifestyle that is more dependent on others.

As rehabilitation professionals, it is necessary that we educate and provide resources to our patients and/or their family members/caregivers to assist in the accessibility planning process.

Utilization of occupational and physical therapy services to evaluate one's current functional mobility and daily living skills can help with making decisions now and for the future. With a few modifications and equipment, one can frequently work through accessibility barriers to improved independence.

Evaluation by an accessibility specialist or other qualified professional can be helpful when considering specific remodeling or when building a new home. Resources who know what accessibility means and how to accommodate a progressive disease within a home design can prove to be invaluable with decision-making.

Knowledgeable advice about the cost of changes is crucial for setting realistic priorities according to immediate and future needs. It may also lead to

recognition that remodeling one's current home may be too expensive. Consequently, it may be more appropriate to consider moving to a different home that is accessible.

Planning ahead will help with wise decision-making for a more efficient, comfortable, accessible and affordable home.

Identification of ways to optimize safety and independence is the beginning of planning for appropriate changes. Getting in and out of a home is essential, especially in an emergency. Often, this is the highest priority. Bathroom and bedroom changes are generally next of importance. The following adaptations are guides for educating patients and assisting with planning.

HOME ACCESS

Deciding the best way to get in and around a home with a progressive disease such as multiple sclerosis takes a lot of thought. Identification of specific mobility device(s) used and/or needed is necessary for appropriate planning.

Ideally, no steps at the entrance of the home are desired. A covered entrance, such as a roof, canopy, or awning, will protect one from the weather elements when entering or exiting.

When climbing steps becomes more difficult, installation of long tread, low-rise steps on the exterior of the house can decrease the amount of energy that is needed and allow for space to walk with a walker.

With a home that has multiple flights of stairs, a long ramp entrance may not be the best option. A lift or elevator may be a better option.



Accessing all rooms within the home can be a challenge if there are narrow doorways. Use of “swing-clear” hinges can add approximately 2 inches, which can often allow clearance for an individual with a mobility device (e.g., walker, wheelchair). Pocket (sliding) doors instead of swing doors can also increase the doorway width.

RAMPS

A ramp is needed when use of the stairs is no longer safe and when access to a home using wheeled mobility is necessary.

Exterior ramp dimensions for safely managing a wheelchair are as follows:

- A slope of 20 inches of length for every 1 inch of height is best (1:20).
- A slope of 1:12 is the minimum (12 inches of length for every 1 inch of height). This may be too steep for some persons to manage safely. It's very important to remember that the steeper the ramp is, the more dangerous it becomes to anyone using it.
- Width of a ramp should be at least 36 inches to accommodate all manual and powered wheelchairs.
- The ramp and platform should have a handrail on all sides that is 32 inches from the ramp surface.
- A 5 x 5 foot level platform at the door, which extends 1-2 feet on the side from which the door opens, will allow room for the person in a wheelchair to open the door without backing up and to be out of the way of the door swing.

A resource for a modular, reusable design of wheelchair ramps that can be installed year round is the Ramp Project. It was started in 1991 as a joint project in Minnesota involving the Metropolitan Center for Independent Living, Minnesota

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Division of Rehabilitation Services, Multiple Sclerosis Society of Minnesota and United Handicapped Federation. (See MCIL and Ramp Project under resources)

STAIRS

Stairs can be the most common barrier of accessibility within one's home.

Sturdy handrails on both sides of all stairways are necessary. Stair treads deep enough for the entire foot can ensure more stable footing and support when climbing steps. Carpeting can increase the risk of slipping; removal can be beneficial. The tread of the step shouldn't extend out beyond the riser to avoid the risk of tripping. A stair rise of 7 inches or less can make it easier to climb steps. It is important that there are no open spaces between steps.

Use of a stair glide/chairlift can be beneficial for accessing levels within a home. At least 4-foot width stairways are needed to accommodate a chairlift. It's important to remember that duplication of mobility equipment is needed at both levels if the individual is unable to transport the equipment on the lift (e.g., wheelchair). It's also important to consider that the additional transfers on/off the chair of the lift that can be fatiguing.

Use of a platform lift between levels can accommodate an individual in his/her wheelchair.

BATHROOM

When designing bathroom space, consideration of the mobility devices used will influence the size and arrangement of the room. Ideally, having enough clear floor space to make a 360-degree turn with a wheelchair is desirable (at least 30 x 48 inches; 60 x 60 inches is ideal). Specifics to consider include:

- How will the toilet be approached? What transfer method will be used?

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- How will the sink be approached?
- Will a tub or a shower be used? What transfer method will be used?
- What type of mobility equipment will need to be used (e.g., walker, manual or power wheelchair)?
- What type of adaptive equipment will be used (e.g., shower chair)?

TOILETS

Generally, a 17-19 inch high toilet is easier and more energy-efficient for transfers.

Grab bars around the toilet need to be installed securely at a height that is easy to reach and assists with transfers. Do not use towel bars as grab bars, as they are not strong enough.

SINKS

A sink mounted no higher than 34 inches with a minimum clear knee space of 29 inches and a minimum width of 31 inches (preferably 36 inches), with plumbing out of the way, is desired. When plumbing is present, be sure to insulate pipes to prevent burns.

A sink with a vanity does not allow close access but can provide valuable counter space. A wall-hung sink can allow one to get closer with a wheelchair. A roll-under sink allows for increased accessibility.

The mirror or medicine cabinet mounted no more than 40 inches above the floor allows access to someone from a seated position.

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GRAB BARS

Grab bar installation should be done according to the user's needs. If personal assistance is given, this also needs to be considered so that placement will benefit everyone in the household.

Grab bars must be installed according to manufacturer's instructions. Professional assistance is necessary if one lacks the knowledge and skill for proper installation. Designer styles and colors are available.

Features to check when selecting and installing grab bars:

- “Fit” for a user's hand. Round or oval shape of 1½-inch diameter fits most people's hands best. Bars are also available in 1-1¼-inch diameter, which may be more comfortable for young children or adults with smaller hands. It's necessary to evaluate the user's hand.
- Safety clearance from the mounting surface. Clearance between the grab bar and its mounting surface should be large enough to allow comfortable reaching and gripping but small enough to prevent an arm from sliding down between the bar and the wall. 1½-inch clearance is a good guideline to follow.
- Placement. The user's physical capabilities, mobility equipment, and constraints of the room layout with fixtures will affect the shape and placement of grab bars. Helpful considerations include:
 - What range of reach is comfortable?
 - Does the user need to lean, push, or pull for support with the transfer?
 - Does the individual have a preference or necessity to have the grab bar on a particular side of a fixture?
 - Will more than one grab bar be beneficial?

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- Will horizontal, vertical, and/or angled mountings be best?
- Material and grip. Bathroom grab bars should be made of stainless steel to resist mold, mildew, bacterial growth, and corrosion. High-impact plastic bars and metal bars coated with plastic also meet that requirement. When installing metal bars, be sure the screws and other fasteners are of a compatible metal type to avoid corrosion where the two are in contact. Where hands will be wet and/or soapy, use a textured grip surface.
- Ability to support the user. Grab bars must have proper “backing” or reinforcement to prevent from bending along its length or pulling out of the wall. Grab bars should be mounted into wall studs, not just the sheet rock or tile. Some bar lengths (18, 24, and 30 inches) don’t match the standard 16-inch spacing commonly used for centering wall studs in most homes. Stainless steel grab bars are typically designed to support 250 pounds anywhere along their length.

An adequate grab bar system must provide support throughout the tub and toilet areas and it must be located at the height that provides good body mechanics. The grab bar should not be angled, as a falling person can slide down the bar rather than be stabilized. It’s recommended to install parallel, horizontal bar along the long tub wall, one for standing and the other one for sitting in the tub.

SHOWERS

A 60 x 60 inch square is the recommended size for roll-in showers (36 x 60 inches is the minimum). Slope the shower floor a maximum of 1/8 inch per foot for water flow.

Walk-in showers should be large enough to accommodate a shower chair, at least 36 x 36 inches. If a shower with a built-in seat is desired, check the location

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and height of the seat for safe transfers. The seat height should be a minimum of 17 inches from shower floor, and positioned for a safe reach of water controls while seated. A walk-in shower with no more than ½ inch threshold is ideal.

If personal assistance is needed, be sure that the size of the shower will accommodate an additional person.

Grab bars in the front and at the side of the shower are recommended at a height that can be easily reached and used with transfers. A grab bar at the back can also be helpful.

Controls should be no higher than 36-48 inches from the shower floor. Use of a hand-held showerhead with an 80-inch hose that is mounted on an adjustable height vertical bar is desirable.

An anti-scald device can prevent the water from getting too hot, and can be installed to prevent accidental burns. Or, turning down the hot water heater to 115 degrees Fahrenheit or less is also effective to prevent burns from hot water.

Use of non-slip decals or bath mat on the shower floor is recommended to prevent slipping

TUBS

A variety of adaptive equipment is available for those who have only a tub for their showers and/or baths. Examples include: shower chair, tub transfer bench, tub slide shower chair, hydraulic bath lift.

Wall grab bars in the front and side of the tub area are recommended at a height that make transfers safe and which can be easily reached. Use of a grab bar on



the back wall of the tub area can also be helpful. Grab bars that clamp onto the side of the tub can substitute for installed wall grab bars and/or be used in addition.

Use of non-slip decals or bath mat on the tub floor is recommended to prevent slipping.

It is also possible to convert a bathtub into a step-thru handicap shower access with a cutout portion of the side of the bathtub. This will decrease a 14-inch step to a few inches. This method utilizes the original bathtub and keeps the walls, floors, and plumbing intact, which can also save dollars over conventional bathroom remodeling. (See Bathcrest resource)

BEDROOM

It's ideal to have at least a 3-foot clearance by the bed to allow enough room for transferring from a wheelchair. A bed height of 20-22 inches allows for more level transfers. If the bed is too low, evaluate use of "furniture extenders/risers" that attach to the legs of the bed frame and raise the height.

Having a roll-in or walk-in closet with lowered rods and shelves (2-4 feet from the floor) will also provide easier accessibility. Removal of closet doors or installation of pocket doors will allow easier entry when closets are too small.

KITCHEN

An efficient kitchen is generally designed around a work triangle formed by the location of three basic work centers: the refrigerator, sink, and range. Ideally, these centers should be arranged to follow the natural sequence of work for food preparation and cleanup. Basic patterns which accommodate this sequence

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include: U- and L-shaped, galley, and island/peninsular work centers. Good counter space next to each of the work centers is very important. As a general guide:

- 1½ foot wide countertop next to the opening-side of the refrigerator is desired as a minimum,
- 3 feet of counter to the right of a sink, and 2 feet to the left (assuming a right-handed user) is desired,
- 2 feet of countertop on both sides of the stove is ideal.

Having a countertop section at least 30 inches wide that is lower will allow for working from a seated position (approximately 28-32 inches above the floor with open knee space). If this is not possible, use of a high chair or stool makes it easier to sit while working at standard height counters. Pullout work boards can also provide a work site. When there are no pullouts, a kitchen drawer can be converted to a work surface by fitting a cutting board on top of it. Stabilization of the cutting board with nonskid material is helpful.

For limited reach, consider side-by-side refrigerator, front or side located controls on the stove and side-mounted water faucets. Side swing oven doors make it easier to be positioned in front of the oven for easier loading and removal of food. A pullout shelf underneath the microwave or oven creates an immediate counter when removing foods.

Use of pullout shelves, lazy susans in corner cupboards, and adjustable height cupboards allows for easy access to storage of utensils, supplies, etc.

LAUNDRY ROOM

Laundry area located on the main floor, near the bathroom and bedroom(s), is ideal.

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Use of a front-loading washer is easier to reach from a wheelchair. Placement of the dryer on a raised platform makes reaching inside easier from a wheelchair and also minimizes bending, stooping and reaching from a standing position. Consider front placement of appliance controls, as they are easy to read and reach from a seated position.

An accessible countertop in the laundry room can be helpful for folding clothes.

LIVING ROOM

Having 3-5 feet between pieces of furniture provides enough room to move when using mobility devices. Ensure there's clear passageways and ample maneuvering space with furniture placement.

A height of 19-21 inches with favorite chairs or couches makes transfers easier and more energy efficient. A firm, dense cushion can increase the sitting height. If the furniture is too low, "furniture extenders/risers" can be used.

Use of remote control units can be helpful for controlling lights, as well as TV, VCR, and entertainment center.

SUMMARY OF UNIVERSAL DESIGN HOME FEATURES

"Universal design" considers a broad range of people and abilities throughout one's life span and incorporates those needs into an accessible design to limit obstacles and maximize independence. These design features increase the usability of the home by people of all ages and abilities. It also enhances the ability of all who reside there to live independently in their own home for as long as possible.

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Summary of general features to incorporate in a universal/accessible design home:

- Level entrance to the home, including the route to parking.
- 36-inch doors at the entrance to the home, as well as within the home. If unable to widen, evaluate use of “swing-clear” hinges to add an extra 2 inches or installation of pocket doors within the home.
- Sidelights at entrance door, or peepholes at heights for adults, children, and people using a wheelchair.
- Door locks that are easy to operate.
- 18-24 inches of clear space on the opening side of entrance doors for wheelchair approach.
- Windows that can be accessed from a wheelchair. Windowsills that are about 24-30 inches above the floor allow people to see outdoors while seated, or standing.
- ¼-½ inch maximum vertical rise at thresholds.
- At least 36-inch width hallways. 42-inch wide hallways are recommended.
- Elimination of throw rugs.
- Use of hardwood floors, tile, linoleum, or carpeting that is sturdy, low-pile and tightly woven for easy maneuverability with/without mobility devices. Floors should be level with a non-slip surface, not sunken or raised.
- Clear, level route through the home, with enough room to turn all the way around in a wheelchair.
- 5-foot diameter turning spaces in bathrooms, kitchens, and at entrances.
- Counters placed at a lower height.
- Clear knee space at sinks and countertops. If plumbing is present, insulate pipes to avoid burns.

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Consortium of Multiple Sclerosis Centers

- Toilet seat heights at 17-19 inches from the floor.
- Lever handles on doors and water faucets instead of knob style.
- Water faucet and controls set off to the side of sink, shower, etc.
- Anti-scald device for water faucets. Temperature can be turned down to 115 degrees Fahrenheit or less on the hot water heater.
- Grab bars securely fastened in bathroom walls.
- Railings as needed throughout the house.
- Front located controls on appliances (e.g., stove, washer and dryer), for easy reading and easy reach.
- Use of adjustable hanging closet rod and shelf systems and/or at several heights.
- Placement of light switches, thermostat controls and power outlets 32-36 inches above the floor.
- Electrical outlets placed 18-24 inches above the floor. Extra electrical outlets throughout the house can also accommodate possible future needs with use of assistive technology devices.
- Use of light switches that can be operated by a single touch using little force (e.g., toggle, rocker, or touch sensitive electronic switches).
- Telephone jacks accessible and located in necessary rooms. Use of portable phones is desired.
- Good, overall lighting with extra, focused lighting as needed for task areas. Also, include lighting in closets.
- Use of bold and contrasting colors to make things easier to see.

Rather than remodel or build a new home, it may be more desirable to move to an existing house that is more accessible. Use of a realtor who has experience with wheelchair-accessible housing can be invaluable with the purchase process. Identification of necessary features will be of assistance to the realtor.

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APARTMENT LIVING

Apartment living presents one with a different situation for making adjustments to their home setting and can also involve limitations with the amount of physical changes that can be completed. As a renter, it's important to know one's rights and responsibilities.

Under The Fair Housing Act, federal law prohibits housing discrimination based on race, color, national origin, religion, sex, family status, or disability. A landlord must allow an individual to make reasonable adaptations to accommodate a physical disability. Frequently it is the tenant who pays for the adaptations. However, it is in one's best interest to inquire if the landlord will provide payment for purchase and installation as frequently the adaptations improve the apartment.

Resources for clarification of local regulations include: the U.S. Department of Housing and Urban Development (HUD) office, state attorney general office, or independent living center (ILC).

Placing one's name on a waiting list for accessible apartments can be an effective means of planning ahead. Contacting the local HUD office is a good resource for researching accessible apartments. Checking disability-related publications may also lead to valuable resources.

Many cities have independent living centers (ILCs); they are also known as centers for independent living (CILs). These are non-profit consumer organizations with extensive information and referral services on living at home with a disability. They may be able to assist with resourcing local accessible apartments. (See Metropolitan Center for Independent Living under the Resource section.)

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Accessible Space, Inc. is a nationwide program that provides accessible, affordable, independent and supportive living opportunities for persons with physical disabilities and brain injuries, as well as seniors.

When living with limited financial resources, awareness of local resources can be invaluable to assist with necessary purchase(s) to modify an apartment. The National MS Society state chapters have information on equipment discounts, entitlement programs, local resources, and emergency equipment loans. Chapter offices can also be a valuable resource for learning about accessible housing in specific geographical areas.

Local charitable organizations and/or churches may also be a funding resource when purchasing home accessibility adaptations that ensure one's safety and independence.

The Pathways for Independence Program with the Multiple Sclerosis Association of America (MSAA) is designed to make homes safer and more accessible for people with MS and their families. The Barrier-Free Housing Program, also with MSAA, offers specially constructed apartments that are completely wheelchair accessible. Presently, MSAA has 125 of these apartments in five separate complexes; four of which are located in New Jersey and one in North Carolina.

Every state has a Department of Vocational Rehabilitation. Some have independent living programs that provide evaluation and advice on home structural modification or equipment. They will often pay for modifications if an individual is work-eligible and must use modifications to get to a job.

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The Veterans Administration may be a resource for veterans for purchase of necessary equipment and/or home modifications.

Immediate use of adaptive equipment may be necessary for safety purposes, despite limitations on one's financial budget. Knowledge of local loaner resources may "buy time" while one is saving money for personal purchase. In addition to the local MS Society chapter, various community organizations may have loaner durable medical equipment available, such as Goodwill, VFW, and American Legion. Depending on one's medical insurance policy, there may be coverage for payment of certain types of durable medical equipment. It is advisable to check your policy, and/or speak with the customer service department for information.

If low-income requirements are met, state and local departments of human resources may have programs that provide financial assistance for adaptive equipment and structural modifications within one's home.

An adaptation or renovation that helps one to cope with MS may be tax deductible. It's advisable to speak with someone who is knowledgeable about current tax laws for more information.

CONCLUSION: Use of occupational and physical therapy services can influence positive accessibility decisions. Completing an in-home evaluation can often be the first step to identify accessibility barriers, solutions/modifications, and appropriate equipment recommendations. Referral to the services of an accessibility specialist, or other qualified professional who understands accessibility issues, can be especially helpful to determine design options that are desirable, functional, and create an atmosphere of wellness rather than disability.

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It is essential that our patients and their family/caregivers be educated about accessibility options. Resourcing and reading information and talking with others who have already made changes in their living situation is an excellent means of learning.

Home modifications are often completed to meet a change of one's immediate specific physical ability and are frequently planned quickly and without adequate research. Consequently, work can be done in haste and may not fully meet one's needs. Planning ahead to include universal design features can make the changes affordable, as well as make one's home more functional and accessible now, and in the future.

Developing an accessible plan that provides for future flexibility and also creates a home that is safe, desirable, and comfortable is worth the effort. Greater independence through improved home accessibility is a goal that is worth pursuing.

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RESOURCES

(These are general resources, not endorsements of products or services.)

- **Accessible Space, Inc. (ASI)**

2550 University Avenue

Suite 330N

St. Paul, MN 55114

(651) 645-7271

1-800-466-7722.

www.accessiblespace.org

The mission of Accessible Space, Inc. (ASI) is to provide accessible, affordable, independent and supportive living opportunities for persons with physical disabilities and brain injuries, as well as seniors. ASI services are available across the country.

- **American Association of Retired Persons (AARP)**

601 East Street NW

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Washington, DC 20049
1-800-424-3410

www.aarp.org

The national seniors' advocacy organization offers printed materials and web resources on home accessibility and universal design (Search "home accessibility"). Also includes a virtual home tour at www.aarp.org/universalhome.

- **Bathcrest**

www.bathcrest.com/stepthru.htm

Bathcrest Step-Thru Insert handicap shower access. Available nationwide.

- **Center for Universal Design**

North Carolina State University
College of Design
50 Pullen Road, Brook Hall, Room 107
Campus Box 8613
Raleigh, NC 27695-8613
1-800-647-6777

www.ncsu.edu/ncsu/design/cud

National research, information and technical assistance center that evaluates, develops and promotes universal design in housing, public and commercial facilities, and related products. Offers publications and resources on accessible, adaptable, and universal design.

- **Home Modification Action Project**

National Center for Supportive Housing & Home Modifications
Andrus Gerontological Center
University of Southern California
Los Angeles, CA 90089-0191
213-740-1364

www.usc.edu/go/hmap,

www.homemods.org

National resource center that offers publications and resources on remodeling for home accessibility.

- **HUD (U.S. Dept. of Housing and Urban Development)**

www.hud.gov/groups/disabilities.cfm

HUD works to strengthen communities in America in a variety of ways. This website page was created for people with disabilities. It contains information, from all parts of HUD's web site that covers much helpful information. Resources listed include (but are not limited to): independent living centers, modification funds, HUD's accessibility guidelines,

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supportive housing for persons with disabilities, accessible housing designs, The Fair Housing Act, and much more. HUD funds housing counseling agencies throughout the country who can give advice on buying, renting, defaults and foreclosures, and reverse mortgages. Contact the closest housing counseling agency or call toll-free 1-888-466-3487

- **LivAbility**

www.lifease.com (click on "LivAbility")

This web site asks questions about your home and your personal circumstances, and then delivers a customized report for making your home more livable. This is available at a modest cost to those outside the service areas of the East Metro SAIL (Dakota, Ramsey, and Washington Counties in Minnesota).

- **Metropolitan Center for Independent Living (MCIL)**

1600 University Avenue West
Saint Paul, MN 55104-3825
651-646-8342

www.mcil-mn.org

This is a nonprofit agency that provides a range of services and information, including the Ramp Project and other resources on accessible home building and remodeling. MCIL is one of eight Centers for Independent Living in the State of Minnesota and one of almost 500 internationally. MCIL is associated with the National Center for Independent Living. This is an established organization that assists people with disabilities to become as independent as possible. Centers for Independent Living are likely to have information about access modification resources. Call the National Council on Independent Living to locate a center near you:

703-525-3406

www.ilusa.com (lists Centers for Independent Living by state - choose mail and scroll down to ILC Directory)

- **Minnesota Housing Finance Agency (MHFA)**

400 Sibley St., Suite 300
Saint Paul, MN 55101.
651-296-7608

www.mhfa.state.mn.us

This Minnesota state agency offers an information series that includes refinancing, design, and remodeling information. "The Home Accessibility Information Series" is a set of nine bulletins highlighting how to modify an existing single-family home. "The Cost of Accessibility in New Single-

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Gimbel Multiple Sclerosis Comprehensive Care Center at Holy Name Hospital
718 Teaneck Road, Teaneck, NJ 07666 (877) 700-CMSC Fax: (201) 837-8504/9414
Email: info@mscare.org Website: <http://www.mscare.org> Federal ID # 22-3216416



Family Homes” evaluates how new construction design can be modified, the impact that these changes may have on costs, and potential areas of cost tradeoff or savings.

- **Multiple Sclerosis Association of America (MSAA)**

1-800-532-7667

www.msaa.com, or

<http://www.ideafinder.com/resource/archives/amd-MSAA.htm>

The Multiple Sclerosis Association of America (MSAA) is a comprehensive, not-for-profit, charitable service agency that most specifically helps people, their friends, their families, and society in general to address the day-to-day needs of those with MS. It also conceives, builds, and maintains barrier-free housing complexes open to all disabled people and is involved in programs and research that affect all with neurological disorders.

- **National Multiple Sclerosis Society (NMSS)**

1 800 FIGHT MS (1-800-344-4867)

www.nmss.org

The mission of the National Multiple Sclerosis Society is to end the devastating effects of MS. The Society and its network of chapters nationwide promote research, educate, advocate on critical issues, and organize a wide range of programs.

- **Paralyzed Veterans of America (PVA)**

801 18th Street NW

Washington, DC 20006

1-800-424-8200

www.pva.org

Resource for Professionals section provides useful links and information on a wide range of topics such as disability rights and law, health care, accessible architecture, and research. As the founding sponsor, PVA also has sections for the Consortium for Spinal Cord Medicine and the Multiple Sclerosis Council. These two important groups produce evidence-based clinical practice guidelines for professions in the field and consumer guides.

- **The Ramp Project**

www.mcil-mn.org/tramp.htm or

www.wheelchairramp.org

The Ramp Project is a modular, reusable design of wheelchair ramps, and long-tread, low riser steps. MCIL (Metropolitan Center for Independent Living) provides guidance and arranging for resources, construction and

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rental or ownership of both permanent and temporary ramps. Also, the Ramp Project has produced a ramp manual (How to Build Ramps for Home Accessibility) and videotape. The manual provides step-by-step instructions for construction of a ramp using this modular design.

- **Trace Research and Development Center**

College of Engineering
University of Wisconsin
Madison, WI

www.tracecenter.org

“Designing of More Usable World for All”. Trace has been a pioneer in the field of technology and disability. Its mission is to prevent barriers and capitalize on the opportunities presented by current and emerging information and telecommunication technologies, in order to create a world that is as accessible and usable as possible for as many people as possible.

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