

# My Own Home



Meeting the needs of children with mobility restrictions  
and their families

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## Introduction

Children enjoy mastering new skills and gaining increased independence as they grow. This is as true for children with disabilities as it is for able-bodied children. The home environment can be designed to maximize independence, safety, and convenience and enhance all family members' abilities.

Each family and each home is unique. For families with children who have mobility restrictions, even minor modifications to your existing home may help.

Use this booklet to help you:

- ◆ Make your home safer for physically challenged children and their caregivers.
- ◆ Increase the independence of children with mobility disabilities.
- ◆ Increase the comfort of all family members.
- ◆ Make your home appear more modern and attractive.

Before deciding what changes to make in your home, consider the challenges and limitations your home presents to the child and the issues with which you are struggling. For many families, top priorities often include:

- ◆ getting in and out of the house
- ◆ using the bathroom
- ◆ moving around in the living areas

You might begin by putting yourself in your child's place. Get down to his or her level. Look around and imagine yourself moving through the space. What can you see? What can you *not* see? What obstacles are in your way? You may be able to immediately see things that can be moved or changed to make life easier for everyone.

The federal government, under the Americans with Disabilities Act, has

developed accessibility guidelines (ADA guidelines) which may be helpful.

Although ADA guidelines are requirements for accessibility features in public buildings and multifamily housing, they can provide useful ideas for modifications of private homes as well. Still, it is important to understand that ADA guidelines are based primarily on the needs of adults and may not be possible or desirable to follow for the needs of children in a private home. (*for ADA guidelines, see page 17, References and Resources.*)

While the residents of the home have the best knowledge of what the daily challenges of caregiving are, a home assessment by an expert such as an occupational therapist or a case manager from an aging or disability services agency in your area may be of great value to determine the modifications and equipment that would be most beneficial.

Experts also have the most current knowledge of the products, community services, and financial supports that are available. Start looking for resources and assistance by checking under "Disability Services" in your local telephone directory.

Financial assistance for purchase of items and installation may be available from your health insurance provider, local aging and disability service agencies or private, non-profit organizations in your area. A prescription for adaptations or modifications to your home from a physician or therapist may increase the likelihood of receiving financial support.

All of the products mentioned in these pages are available through local home improvement businesses, although some items may require a special order.

## Coming Home

*Getting in and out of the house: safely, quickly, and conveniently.*

### In the Neighborhood

Newer sidewalks are required to have a cut-away or built-in ramp at street corners. If your neighborhood does not have these, contact your local government and encourage them to install them.

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*Look at the entrance to your home. Begin at the street and note each obstacle that prevents you from having one smooth surface from the curb to the interior of your home.*

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### At Home

Look at the entrance to your home. Begin at the street and note each obstacle that prevents you from having one smooth surface from the curb to the interior of your home. A “zero-step” surface all the way into the house will allow the greatest safety and independent mobility.

Look for obstacles along the entire pathway to the door. Trees and bushes that hang over or crowd the walkway, and shed leaves or limbs, will become a hazard. Consider drainage needs around the walkway to prevent standing water.

Install automatic lighting. Add motion or light sensors to existing outdoor light fixtures so you never arrive at the door in the dark. Solar lights placed along the walkway may provide enough light to show the edges of the pathway and lead someone safely to the door after dark.

Listen to the doorbell or knocker to make certain that it is easily heard throughout the house. Check if it is easily seen and reached outside the door.

If space is limited, consider an electric wheelchair lift.

Install a grab bar whenever there is a step, since a large number of falls happen at single step transitions. The grab bar will also be helpful for the caregiver when steadying and assisting.

Plan an emergency exit. An alternative exit from the home may not be convenient, but must at least be possible to use in an emergency.

Stairs are difficult to navigate and may be dangerous for someone with mobility challenges and their caregivers. A ramp is usually the alternative.




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*Raising the grade of the ground outside a home will eliminate the need for stairs. Slope the ground away from the home for drainage purposes.*

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*Modifying an entrance other than the front door may be more economical and convenient, depending on where cars are parked or street and sidewalk access is located.*

When placing an entrance ramp, think about preserving yard space and the appearance of the house and yard. Incorporating a no-step entrance to the main entry through a well-planned hardscape may prevent strangers from identifying the residence as that of a vulnerable child. Or, consider placing the ramp at a side entrance or inside at the garage entry.

Wooden ramps are a common, semi-permanent solution. They can be installed fairly economically and can be removed at a later date without leaving permanent damage to the home or yard.

When planning and installing a ramp, consider the following:

- ◆ Space to maneuver at doorway.
- ◆ A level landing at top and bottom.
- ◆ Textured, non-slip surface.
- ◆ Handrails on both sides.
- ◆ Guardrails 36-48 inches high with additional lower rails.
- ◆ Handrails 30- 36 inches high for adults and 24 inches for wheelchair users and children.
- ◆ A curb or edge projection to prevent slipping off the edge.
- ◆ Protection from weather.

- ◆ Space for people to pass.
- ◆ Landings for rest on long ramps.
- ◆ For outdoor ramps, 1 inch slope per 20 inches of ramp is recommended. A lower slope is preferred if space is available. The maximum slope must be no more than 1 inch per foot of ramp.
- ◆ Rails extending beyond the ramp for transition to adjoining surface.

Raising the grade of the ground outside a home will eliminate the need for stairs. Slope the ground away from the home for drainage purposes.

Some garages allow space for a ramp. This protects you and your child from the weather and provides security during loading. A ramp not visible to strangers may also prevent strangers from identifying the residence as that of a vulnerable child.



*Placing a ramp inside a garage protects you and your child from the weather and provides security during loading.*

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## Doorways

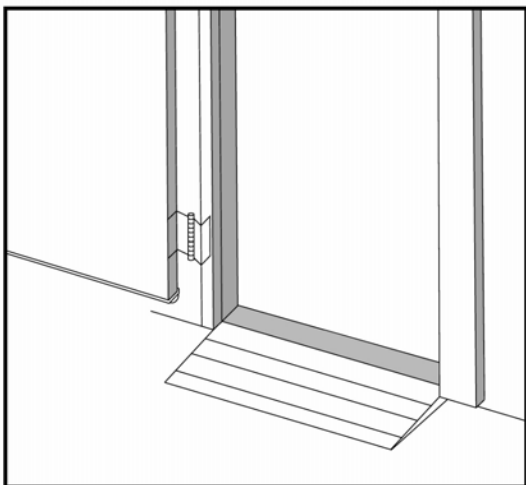
*Features that allow for increased accessibility, convenience, and safety.*

Exterior doors are usually the widest in the home. Ideally all doors should be 36" wide. To add another 2" and to ensure the door moves out of the way for both entrance and exit, offset or swing-clear hinges can be installed. The latch side of a door should be on the side that has the most clearance to allow maneuvering around the door.

A kick plate along the bottom of the door will protect the door if a wheelchair or walker bumps into it or moves against it to open.

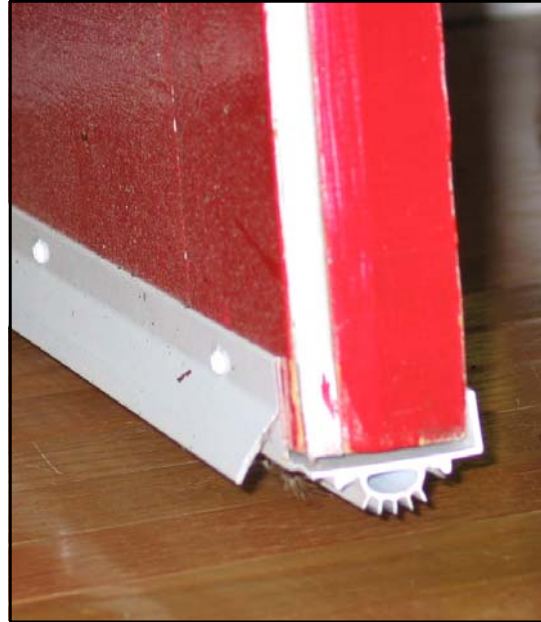
Dissimilar floor levels can be a hazard. Smooth floor transitions with a mini-ramp.

"Off-set" or "swing-clear" hinges can be used to replace existing hinges and enable the door to "pop" out of the frame and lay flat against the wall. This allows extra clearance in the doorway and prevents the door from blocking a portion of the room or hallway.



*Smooth transitions between dissimilar floor levels and use off-set hinges to allow extra clearance.*

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*A door extension fills the gap created when thresholds are removed or lowered.*

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If a door swings into a small room or bathroom, the hinges can be reversed so the door swings outward to eliminate the need to maneuver around the door once inside the room.

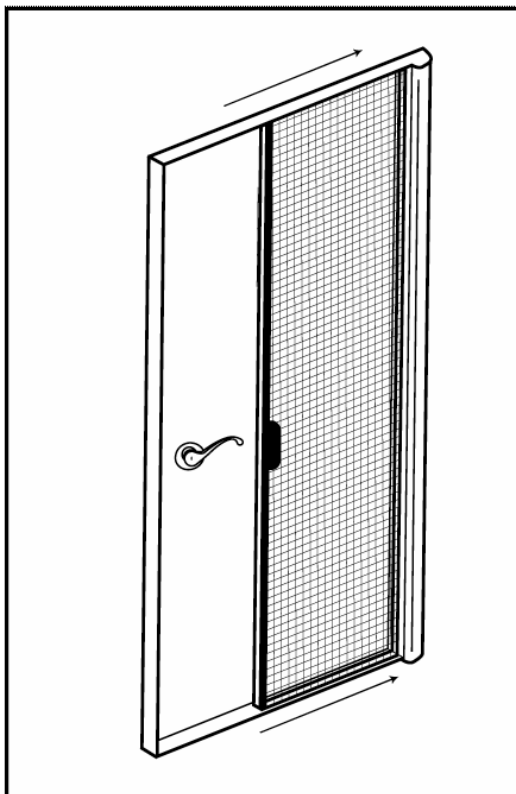
When thresholds are removed or lowered, a door extension will be needed to fill the gap that is created underneath the door. There are flexible rubber attachments that can be placed on the bottom of the door to seal out drafts and insects.

Round door knobs with key locks are the most difficult to use. There are many options for accessible door locks and handles. Lever handles do not require a strong grip or even an open hand; push latches require no grip at all. Combination locks with keypads eliminate the need to carry or insert a key.

Magnetic door holders are available to keep a door or screen open while navigating the doorway.

Retractable screen doors also keep the screen stored safely out of the way, until its use is desired. These open and close like a sliding door and can work on single doors or double doors. The screen rolls into a casing at the edge of the door.

Automatic door openers and closers are available for home installation. They gently close the door behind you, eliminating the need to reach backwards. Automatic door openers may be either spring-loaded or electric. They can be as simple as springs attached to the door and frame, hinges with built in springs, or hydraulic openers that attach over the door.



*Retractable screens roll out of the way when not needed.*



*Lever handles are easy to use for everyone.*

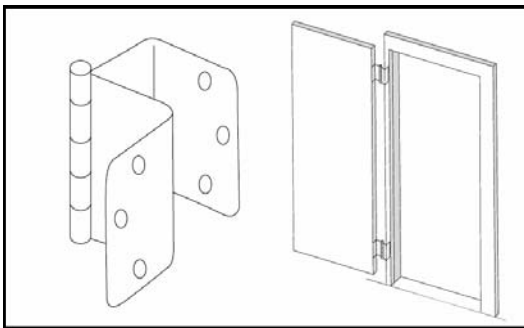
*For maximum accessibility,  
all doors should be 36" wide.*

## Bathrooms

*Consider safety and convenience for both the child and the caregiver.*

### General Considerations

Make some space. Bathrooms are usually small areas. Clear away furniture, garbage cans and household items. Consider removing cabinets or closets to provide space. A 60" turning circle is ideal for an adult-sized wheelchair, although few existing bathrooms offer this much space.



*Off-set hinges allow the door to clear the frame.*

An outward swinging door provides more room to maneuver in a small bathroom. Swing-clear or off-set hinges allow a door to swing completely out of the doorway and back against the wall, adding 2" clearance in the doorway and not blocking the hallway. Doors should be able to be quickly unlocked from the outside in case of emergency.

Clear the floor. Remove any thick rugs or mats that could slip or trip someone. Make certain the floor covering provides a non-slip surface, even when wet.

Adequate light is important for safety. To avoid entering a dark bathroom, install light sensitive or motion-activated night lights. Night lights illuminate possible obstacles and may provide enough light for night visits to the bathroom, or to find the light switch when a brighter light is needed.

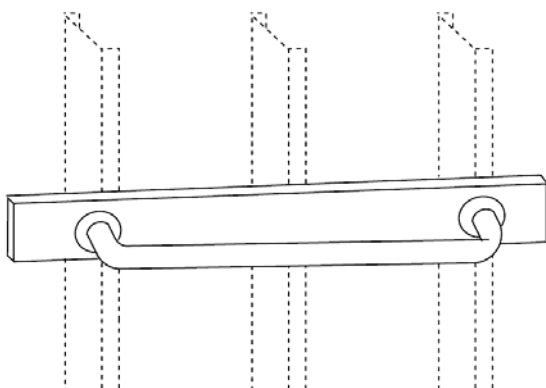
Spills, splashes, and soaps can be slippery and add an extra hazard to the bathroom. Make the extra effort to be sure that floors, bathtub edges, and grab bars are clean and dry.

### Grab Bars

Grab bars provide an extra measure of safety. Even if the child is unable to use the grab bars themselves, grab bars can assist the caregiver with balance and control. Installing grab bars vertically will provide a lower grip for a child and a higher grip for an adult. This type of installation will also accommodate the growth of the child. A secure floor-to-ceiling safety pole can be installed if there is not a convenient wall for grab bar installation.

**Grab bars must be securely anchored.** If construction studs in the walls are not in appropriate locations in the area being modified, blocking must be added. If the bathroom wall surface is tile, you might consider installing the blocking from the adjoining room. Visible blocking on the outside of the wall is also possible, although not as attractive as having the reinforcement inside the wall.





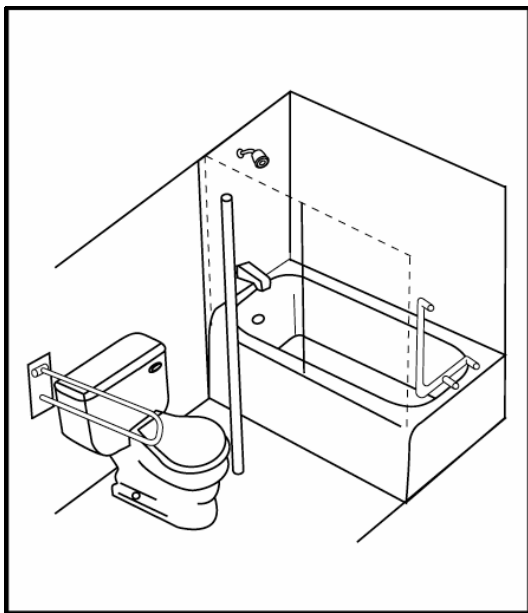
*Anchor grab bars securely to studs or wood blocking.*

According to ADA guidelines, grab bars should be 1¼” – 1½” diameter. They are best placed 1½” from the wall to allow room to grip, but not enough space for an arm to slip past and become pinned. Grab bars should support at least 250 pounds, or at least the combined weight of the caregiver and child. They should have a textured surface and be round or oval. Avoid sharp edges and square or rectangular bars.

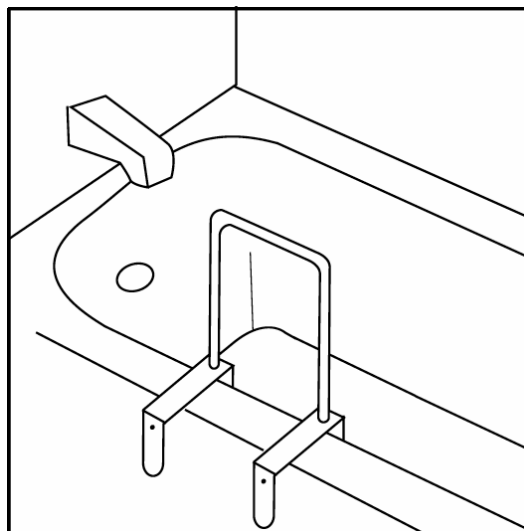
Vertical grab bars at the edge of the tub allow a caregiver to maintain their balance while assisting with bathing or transferring.

Grab bars should be installed in all showers and tubs, near the toilet, and in any other location where support may be needed.

Grab bars that clamp onto the rim of the bathtub are available. These can be used on a temporary basis, such as when traveling. Make certain these are securely fastened before use.



*Vertical and swing-away grab bars make the bathroom convenient for everyone.*



*Temporary grab bars are especially useful when traveling. Fasten securely.*

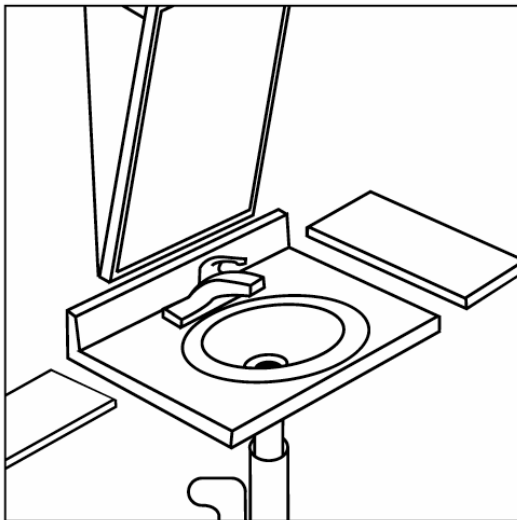
Fold-up or swing-away bars clear the area when other family members use the bathroom.

Towel racks offer a hand hold when a grab bar is not convenient and may be dangerous. Attractive grab bars can double as towel racks. Remove existing towel bars that cannot support weight and replace with grab bars.

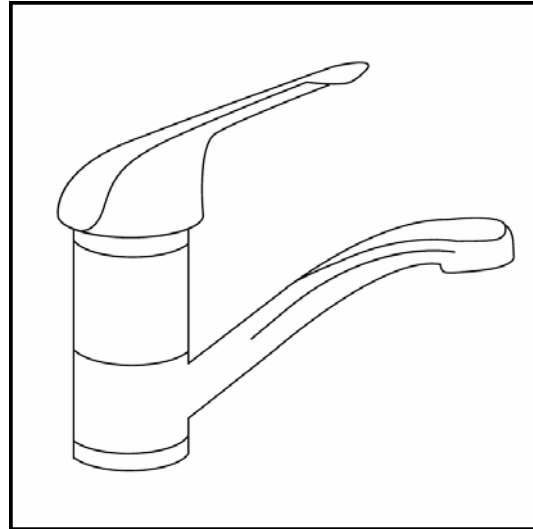
### Fixtures and Faucets

Consider wall mounted sinks or pedestal sinks that allow open space underneath. Alternately, shallow cabinets with a protruding sink may serve the same purpose. Shallow sinks allow people who are seated to reach over the edge and retrieve items from the bottom of the sink.

To allow wheelchair or shower chair access to a counter-installed sink, remove the toe-kick, extend the flooring material into the cabinet, and provide swing-and-slide hinges. Such hinges are readily



*A tilted mirror and under-sink knee space are useful for seated users.*



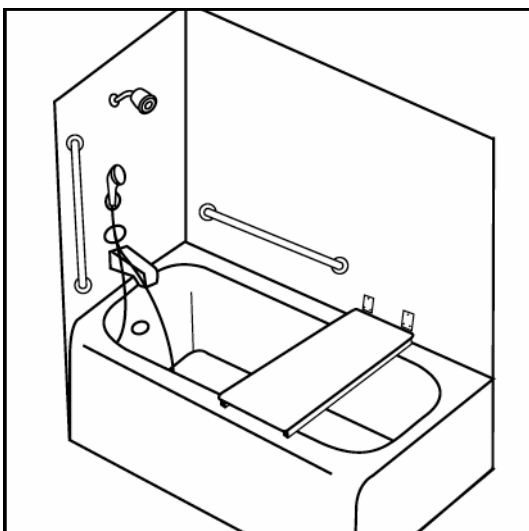
*Single lever faucets can be used by pushing in any direction with one closed fist.*

available at home improvement stores and are usually labeled for use with TV or computer cabinets.

An over-sink mirror may not be usable by a child or seated person. Tilting the mirror toward the floor or adding a full length mirror on another wall may be a good alternative. Large mirrors give the illusion of space and reflect light to brighten a small bathroom.

To prevent burns, the water temperature should not exceed 120°F. Set the temperature on your water heater on “warm” or “low.” Make certain faucets in the sink and tub/shower have built-in anti-scald devices.

Faucets should be operable by anyone, regardless of strength, dexterity, or height. Consider single lever faucets that can be used by pushing in any direction with one closed fist. Faucets and soap dispensers equipped with motion sensors are available for home use. Some specialty stores carry counter-top soap dispensers with motion sensors.



*A seat for the tub user or for the caregiver is a great safety and convenience feature.*

Many young children prefer baths to showers. Baths can be soothing and therapeutic and an enjoyable activity. If you have a young child and are able to safely assist them, delay replacing the tub with an accessible shower until they are older.

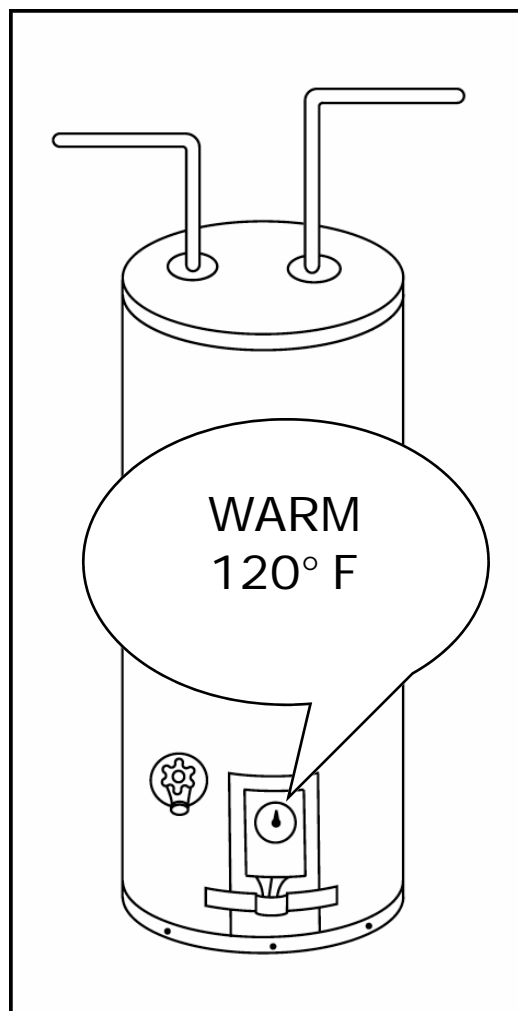
The bottom of the bathtub may be slippery and present a hazard. Use a tub mat or apply decorative adhesive decals for a quick and inexpensive remedy. Alternately, hire a professional resurfacing.

Sliding doors on bathtubs may interfere with equipment such as lifts, benches, and grab bars and are not sturdy enough to be used for assistance or support. Remove sliding doors and their rails. If screw holes, rust marks, or traces of caulk are bothersome, simply hide the problem with an attractive shower curtain or consider professional restoration.

A seat for the tub user or for the caregiver is a great safety and convenience feature. There are many options. Some bathtubs come with an extra wide section for seating

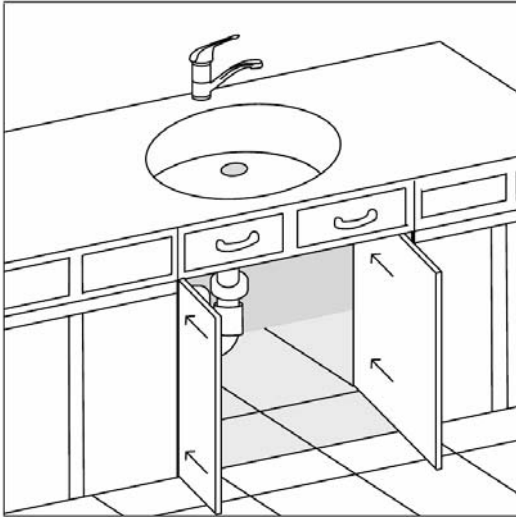
on the edge of the tub. Other options include a bench that straddles the tub edge or a fold-down seat attached to the wall.

Shower chairs may allow a child to be more safely lowered into and out of the water. Some shower chairs straddle the bathtub so that the child can be seated outside the tub, slid over the bathtub edge, and slowly lowered. Some manufacturers offer shower lift chairs that do not require a power source to lower and raise the bather in the tub. Some utilize water pressure while others are battery operated.



*Prevent burns by setting water heater to the warm setting.*

To minimize splashing and provide water where it is wanted, consider a handheld shower. For maximum safety and convenience, look for a shower head that has the on/off control on the handheld portion.

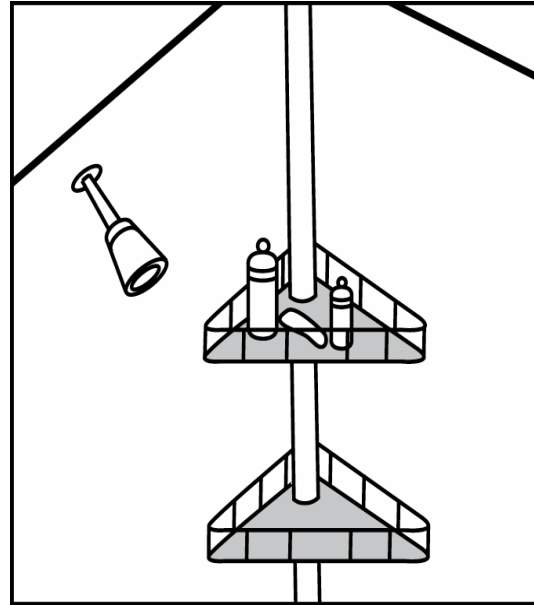


*To allow wheelchair or shower chair access to a counter-installed sink, remove the toe-kick, extend the flooring material into the cabinet, and provide swing-and-slide hinges.*

## Cabinetry and Storage

Provide counter space around the sink to allow for easy access to toiletries. Add shelving at counter height to increase the number of items in reach of the child. Keep regularly used items in the most convenient locations and store seldom-used items elsewhere.

Install shelves or racks in the shower or near the bathtub at a convenient height for soap and shampoo. For temporary or movable installation, racks with suction cups are appropriate. Poles with a series of



*Keep regularly used items in convenient locations. Shelves at different heights accommodate all family members.*

racks at different heights can be placed in the corner of a tub to accommodate all family members.

Make drawer and cabinet handles easy to grip by replacing existing hardware with large U-shaped handles.

Toilets are manufactured in a variety of sizes. If a child needs assistance transferring to the toilet, a raised toilet may be safer for the caregiver. If the child can stand and transfer alone or with minimal assistance, a smaller toilet will be convenient for them. Padded toilet seats soften landings.

All counters, cabinets, and wall edges should have rounded corners. If you cannot replace existing sharp edges, consider adding a rounded edging or padding as necessary.

## Living Areas

*Safe and convenient movement inside the home.*

After insuring that you can safely enter and exit your home and manage the bathroom, safe and convenient movement inside the home becomes the next focus.

Check the path in the house most traveled by the child and caregiver. This path usually includes the home entrance, bedroom, bathroom, dining room, and living or family room. What are the obstacles going from room to room independently? What would make it easier to move around?

Grab bars can be useful in any area of the house. Attractive grab bars are available that look like residential chair rails but still meet the support guidelines. Strategically placed grab bars throughout the home can add a measure of independence or assist a caregiver. Grab bars placed on walls next to a favorite chair or by a bed may be enough to allow someone to stand and maneuver themselves independently. A secure floor-to-ceiling pole is an alternative when there is no wall to attach a bar to.

Some people prefer not to use assistive devices such as wheelchairs, walkers, or gait trainers inside the house. Installing attractive grab bars around smaller rooms such as dining rooms can give the appearance of a chair rail and will provide support when assistive devices won't fit in enclosed areas.

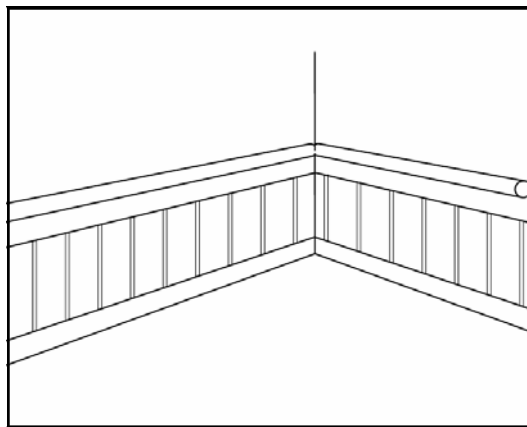
Sturdy furnishings are sometimes used as a substitute for equipment in crowded rooms. If you rely on furniture for support, test each piece to make sure it will support weight without tipping, sliding or being damaged. Attach any furnishings to the wall that might tip over if someone falls or leans heavily on them. This is especially important for bookcases and other tall pieces of furniture in case young children

attempt to climb them to reach higher shelves or if an earthquake occurs.

Interior doors can be made to open fully back against the wall with the use of off-set hinges. Replacing existing hinges with off-set hinges will add additional clearance to a doorway, and prevent the door from blocking a portion of the hall or room.

Younger children may move around more on the floor while at home. Clearing as many furnishings and possessions as possible from the floor, including throw rugs and tables in hallways, will allow safe and convenient passage. It also allows people to pass each other more easily in a hallway. Make extra effort to keep floors clean and clutter free when a resident of the home spends much time on the floor.

Adding shelving units or cabinets in often-used areas such as a family room can provide an organized storage space for possessions, supplies, and equipment. They make clean-up easier by giving a location to put things off the floor and save steps when retrieving desired items.



*Some grab bars have the appearance of a chair rail.*

Adequate lighting is very important for safety and quality of life. Automatic lights with timers or with sensors for motion or sound will eliminate the need to reach for switches or to locate them in the dark. Sensors are available to add to existing fixtures rather than having to replace them. Lamps are available that turn on when touched, so manipulating a switch is unnecessary.

Extensions added to a light switch makes it possible to flip a light switch on from a

lower level, and rocker switches can turn a light on with an arm or fist.

Research suggests that full-spectrum lighting year-round encourages people to be more active and elevates mood. This could be beneficial to caregivers and young children who are unable to be outside or be as active as they would like.

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## Working with Contractors

*Beyond do-it-yourself home improvements.*

At some point, you may want to make changes to your home that require advanced skills. Think about what you may be able to do yourself. Be realistic about the skills you have, the tools you possess and the time you can commit to a project. Contact local disability and aging service agencies to ask about community programs that might help with the purchase and installation of equipment and remodeling.

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*Prioritize the improvements that will make your home safer, more convenient and more comfortable.*

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If you are considering working with a contractor, begin by carefully determining what you want done and what your budget is. Prioritize the improvements that will make your home safer, more convenient, and more comfortable for the person with physical challenges, their caregivers, and others living in the home.

Do as much research as possible into what options are available. Attend home shows, visit home improvement stores, medical supply stores, and the showrooms operated by builders and remodelers. These often include examples of design features for people with physical challenges and show equipment and construction features that you may not have seen before.

### Choosing a Contractor

Ask others who have had similar work done in their homes for names of local contractors. Getting references from others is one way to “prescreen” potential service providers. This is a common way for contractors to obtain work. You might also check with a local building supply company. They may be familiar with reliable contractors that come to them for supplies.

Check your local phone book for businesses that have been in existence for some time. If you contact a referral service, ask how they screen contractors on their lists. Be wary of anyone who comes to your door or telephones you.



*Confirm that contractors are licensed and registered with the state.*

At the first contact with a contractor, ask if they are licensed, bonded, and insured, then confirm that they are registered with your state's Construction Contractors Board (CCB). You can find the listing for your CCB in the state government section of the telephone directory. You should be able to check on the status of every contractor licensed to work in your state by phone or internet.

Contractors cannot legally operate if they are not licensed and insured. If the contractor you are considering is registered, they will have a current license number for their business and be willing to provide the number for you. When you contact the CCB, ask how long the contractor has been in business. A contractor who has only been registered for a short time may be a fine contractor. However, unethical contractors who have had past trouble sometimes dissolve their old business and re-register under a new business name. Ask for a list of formal complaints that have been filed against a contractor and probe for past history under another name.

Ask each contractor for references, preferably for work similar to what you want done. Contact the references they provide. Most people are willing to share

their experiences with a contractor if they have been satisfied with his work.

Request multiple bids. Some contractors may charge a small fee for this but should apply that cost to their work if you decide to hire them. You should receive a written bid outlining details related to the job.

These include:

- ◆ An itemized list of duties to be performed including preparation of the area, removal of existing features, replacement of sheet rock, moldings and painting.
- ◆ A full description of supplies and materials including the price. This should include brand names and product numbers of the items to be installed.
- ◆ Payment schedule. (*see next section*)
- ◆ Permits needed and who will obtain them.
- ◆ Work schedule, including starting and completion date.
- ◆ Daily schedule (what hours of the day workers might be in your home).
- ◆ Will the contractor or their employees be completing the work.
- ◆ Who is responsible for clean up and disposal of debris.
- ◆ What warranties are offered on products or workmanship.

## Bids and Payments

Review each bid you receive to make certain it includes complete details. A low bid might not include the cost of equipment needed or might include lower quality fixtures and materials than other bids. Think about which contractor you would like to work with and have in your home and around your family.

Consumers have a three day "cooling off" period after they sign a contract to change their minds if the agreement was not signed at the contractor's permanent business location. If you decide to cancel the

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*Written change orders will prevent misunderstandings.*

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agreement, you must do so in writing and mail it to the address given to you by the contractor. The postmark date must be within three days of the original agreement. You do not have to give a reason for canceling the contract during the cooling off period. The contractor is obligated to inform you of this cooling off period.

When changes are substantial, a building permit may be required. The building permit is attached to an inspection process that will confirm that the work is being done according to building codes.

Contractors will request a portion of payment up front to purchase supplies and materials. Never pay the full amount before work is started or completed. Never pay in cash and request a receipt for all payments. Schedule additional payments as the job progresses to cover the materials needed and the work that has been done. The payment schedule is often tied to successful inspections by the building official. Make the final payment only when the job is completed to your satisfaction.

Companies who have supplied equipment or materials for use in your remodel and subcontractors who the contractor hired can place a claim or *lien* against your home for the amount they are owed if they are not paid by your contractor. Ask for proof of payment to all the suppliers before you make the final payment your contractor.

## If Things Go Wrong

If changes to the original project are made along the way, be sure to execute an official “change order” to avoid misunderstandings. The change order details work, materials, and costs and becomes part of the construction contract.

Keep open and ongoing communication with your contractor as your project progresses. Ask them to let you know immediately if anything unexpected comes up. Keep your own records of the project including copies of all plans, contracts, receipts, permits, and change orders.

If you have concerns, write down what your concerns are so your thoughts are organized and your expectations are clear. Try to work things out with the contractor first. Then contact your state Construction Contractors Board (CCB). They offer help solving disputes. You may need to file an official claim in writing before they are able to look into the matter.



## References and Resources

- AARP. Checklists for accessible homes and additional information. <http://www.aarp.org/>
- ADA Accessibility Guidelines for Buildings and Facilities (ADAAG).  
<http://www.access-board.gov/adaag/about/index.htm>
- Contracting for Permanent Repairs*. Louisiana State University Ag Center Research and Extension.  
[http://www.lsuagcenter.com/en/family\\_home/](http://www.lsuagcenter.com/en/family_home/)
- Duncan, R. (2004). *Wood Ramp Design; How to Add a Ramp that Looks Good and Works Too*. The Center for Universal Design. College of Design, North Carolina State University, Raleigh, NC.  
<http://www.design.ncsu.edu/cud>
- Everything You Wanted to Know About Hiring a Professional Remodeler, Protecting yourself from Contractor Fraud, and Resolving Builder Problems*. (2006). National Association of Home Builders (NAHB). Washington, D.C. <http://www.nahb.org/>
- Home Modifications, Resource Guide*. (2002) NAHB Research Center, Inc. Upper Marlboro, MD.
- Home Modifications*. California Department of Aging, Sacramento, CA. <http://www.aging.ca.gov>
- Home Safety Checklist*. Rebuilding Together, Washington, D.C. <http://www.rebuildingtogether.org>
- How to Avoid Being a Victim of Construction Fraud*. Tips from the Oregon Construction Contractors Board. Salem, OR. (2003). <http://www.ccb.state.or.us>
- Informed Consumer's Guide to Funding Assistive Technology. Informed Consumer's Guide to Accessible Housing*. Abledata, Silver Spring, MD. <http://www.abledata.com/>
- National Resource Center on Supportive Housing and Home Modification, University of Southern California, Los Angeles CA. <http://www.homemods.org/>
- 16 ways to Avoid Remodeling, Repair and Construction Problems*. Oregon Construction Contractors Board, Salem, OR.(2005). <http://www.ccb.state.or.us>
- Tremblay, Jr. K. and Birdsong, C. (2004) *Home Adaptations for the Disabled*. Colorado State University Cooperative Extension, Fort Collins, CO. <http://www.ext.colostate.edu/>
- The Cooling-Off Rule: When and How to Cancel a Sale*. Federal Trade Commission, Washington, D.C. <http://www.ftc.gov/bcp/online/pubs/buying/cooling.htm>
- Universal Design, Housing for the Lifespan of All People*. (2000). The Center for Universal Design. College of Design, North Carolina State University, Raleigh, NC.  
<http://www.design.ncsu.edu/cud>
- What you should know before you hire a contractor*. Contractors State License Board, Sacramento CA. (2004). <http://www.cslb.ca.gov>
- Yeans, M. (2004). *Universal Design for Better Living: The Essential Bathroom*. Iowa State University, University Extension. Ames, Iowa.  
<http://www.extension.iastate.edu/universaldesign/>



Support for this publication provided by the

## Healthy Homes Partnership

U.S. Department of Agriculture  
Cooperative State Research Education and Extension Service  
U.S. Department of Housing and Urban Development



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