

A Home For Life

Home Modifications for Aging in Place with an Intellectual Disability

Richard V. Olsen, Ph.D
B. Lynn Hutchings, M.Arch.



Center for Architecture & Building Science Research
New Jersey Institute of Technology

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**Center for Architecture & Building Science Research
New Jersey Institute of Technology
University Heights
Newark, New Jersey 07102-1982**

Acknowledgments

A Home for Life was produced with help from many dedicated people. It is truly a collaborative work and we must express our gratitude to the many people who helped us bring this manual to life.

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- Allies
- Alternatives
- The Arc of Atlantic County
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- The ARC of Middlesex
- The Arc of Monmouth
- The Arc of New Jersey
- The Arc of Union
- Community Access
- Community Options
- Disabilities Resource Center
- Hudson Milestones
- JESPY House
- LADACIN Network
- Our House
- Partnerships for People
- SCARC
- Spectrum for Living
- 21 Plus
- VOCA/Rescare

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Introduction

Seniors with life-long, or pre-existing, intellectual disabilities* have the same wishes for the future as other older Americans. They too want to remain in their homes and "age in place."

Unfortunately, successful aging in place does not just happen. Many older people require both in-home and out-of-home supports to make aging in place a reality. Outside supports typically include ready access to family and friends, shopping, medical care, transportation, recreation, and religious pursuits. In-home supports concentrate on assistance with the "activities of daily living"—dressing, bathing, toileting, cooking, eating, and moving around the home. These supports can come from people, in the form of personal care, and from the physical environment, through home modifications and assistive technologies.

A Home for Life focuses on the physical environment because its importance is often overlooked by older people, families, and service providers *until* there is a problem. However, making their homes safe ahead of time will allow seniors, with the exception of people with severe disabilities, to do as much as possible on their own—no matter how small the task. Most everyday activities, such as bringing in the mail, hanging up a coat, getting in and out of a tub, climbing a flight of stairs, or preparing a meal or snack, can all be done more safely, easily, and independently with the right environment. To create the "right" home environment, people need to know where the danger points are and what to do about them. Helping people to make their homes assets to support aging in place, rather than liabilities, was the driving force behind this manual and web site.



Intellectual Disability—a word about definitions.

There are many terms used to describe an intellectual limitation. These include intellectual disability, developmental disability, mental retardation, mental handicap, cognitive impairment, and intellectual handicap. We are using intellectual disability because it is the definition adopted by the World Health Organization and it appears to be the term that the field is gravitating toward. An intellectual disability is defined as a "significant intellectual deficit present from birth or at an early age...This condition results in a lifetime of lower than average overall capability for self-determination and general independent functioning and performance on vocational, social, and personal function."

The vast majority of the older people that were assessed in this project had an intellectual disability.



Why the Physical Environment Is Important

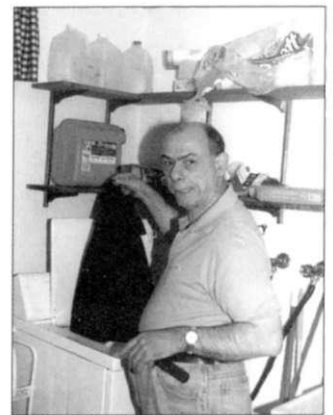
People with intellectual disabilities are living longer than ever before. Thanks, in part, to the deinstitutionalization movement, most older people with disabilities now live where everybody else lives—in regular homes and communities. This is good news from a normalcy and inclusion perspective. However, it is not necessarily good news from a home safety viewpoint. Most housing in America was not built with the needs of the aging in mind. People who are experiencing typical age-related declines—vision loss, arthritis, decreasing mobility and stamina—or who use wheelchairs and walkers are more vulnerable. As a result, they require more physical supports in their homes. These supports are often not present. In preparing this book we assessed over 125 older people with disabilities who were living in group homes, supported apartments, and family houses. During these assessments, we saw many environmental hazards that had the potential to compromise safety and independence. While these hazards should be corrected in any home, they are particularly problematic in the homes of people who are aging with a disability.

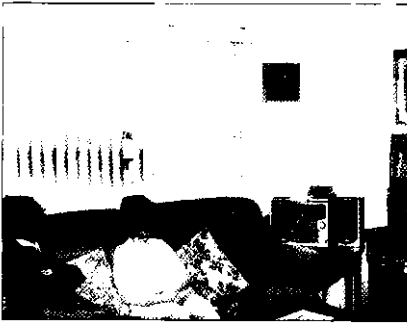
Aging takes its toll. As the body grows older, it undergoes fundamental changes that affect all functioning areas. Physically, older people may experience decreased mobility, agility, strength, and stamina. Sensory losses, such as vision and hearing, are common. And seniors may notice declines in memory, judgment, and other intellectual abilities. A detailed discussion of all of these changes is outside the scope of this publication. However, an overview of age-related declines will illustrate how aging affects the way seniors use their environment and why the home can become a dangerous and challenging place.

Physical Changes

As the body ages, people typically experience a gradual shift in their physical abilities.

- *These changes can include:*
 - Decreased mobility. People may lose their ability to move through their environment. It often becomes harder to walk distances, use stairs, or climb in and out of the tub or shower.
 - A reliance on mobility assists. People may need devices such as canes, braces, walkers, scooters, and wheelchairs to help them navigate their environment safely.
 - Balance problems. Walking or standing for long periods of time can become more difficult. This may make it harder to work at the kitchen counter or sink or to stand in the shower without falling. Loss of balance can also make it more difficult to change body positions. Climbing into a tub or getting out of a chair or a bed can be dangerous for people who are unsteady on their feet.
 - Loss of stamina. Older people may find it harder to walk distances, climb stairs, or make their way up a sloping sidewalk or driveway.





- Decreased muscle strength, coordination, and flexibility in the joints. This can make bending, reaching, and lifting more difficult. It becomes harder to retrieve items from drawers and cabinets, get on and off a toilet seat, climb out of a chair or a bed, open a heavy door, or lift and carry laundry, groceries, and dishes.
- Arthritis and other inflammatory diseases. Joints swell and stiffen. This can make it difficult—or impossible—to turn a faucet or a door handle, grasp a drawer pull, or switch on a light.

Adaptations to the home environment are often necessary to compensate for these changes in the physical abilities of the body.



- *These modifications might include:*
 - Grab bars and handrails to provide additional support.
 - Wider halls, doors, and doorways to accommodate wheelchairs and walkers.
 - Additional floor space for turning wheelchairs and flat level surfaces for easy rolling.
 - Ramps, lifts, and a re-grading of the property to bridge changes in levels.

Sensory Changes

Aging also affects the senses. Vision and hearing loss are the two most common sensory changes.

Loss of vision

The aging eye undergoes a number of changes that alter older people's ability to see, understand, and use their home environments.

- *Visual changes that typically accompany aging include:*
 - A greater sensitivity to glare. This can make direct light painful and even blinding at times.
 - A gradual loss in the ability to see detail (visual acuity). This can make it harder for seniors to put a key in a keyhole, read the dryer settings, see the markings on the stove controls, or notice a telephone wire lying across the floor.
 - Longer adaptation time to changes in light levels. Older people may become temporarily blinded when they walk from a brightly lit hallway to a dark living room or when they step outside at night. This can cause confusion and increase the possibility of falling.
 - A reduced field of vision and decreased depth perception. The field of vision narrows because the pupil gets smaller. Older people may not see things in their peripheral field of vision. As a result of these perceptual problems, seniors may bump into or trip over things or miss the edge of a chair or bed because they misjudge its exact location.



- Restricted color and contrast recognition. This makes it harder for older people to see objects in their environment or to distinguish specific objects from the background. Since the lens of the eye thickens over time, older people need more light to reach their retinas in order to see detail. This makes it more difficult for anyone over 40 to read, cook, put on make up, and perform other everyday tasks.

In addition to these normal changes in the aging eye, diseases such as cataracts, glaucoma, and macular degeneration can further reduce visual abilities.

The home environment should be adapted to compensate for the increased sensitivity to glare and the vision loss that typically comes with aging. Window coverings, frosted light globes, indirect lighting, and matte finishes can all help to reduce glare in the home. Light levels can be increased and task lighting installed to compensate for vision loss. These adaptations enhance safety by reducing the potential for accidents, making homes more understandable, and helping people to continue familiar tasks and routines.

Hearing

Hearing loss is common among older people. As people age, they have more difficulty hearing above background noises. Good acoustics are necessary to absorb background noise. Acoustical comfort can be provided with carpeting, drapes, ceiling tiles, wall coverings and other sound absorbing materials. For people with a hearing loss who read lips or use sign language, good lighting is essential so they can see the face and the hands of the person who is speaking or signing to them. To increase awareness of critical events or times in the environment, visual alarms are needed for all doorbells, telephones, timers, alarm clocks, and smoke detectors.

Unfortunately, most people do not experience these varied losses in isolation or one at a time. Deteriorations generally occur in combinations, and these physical and sensory losses may be compounded by declines in memory, judgment and other intellectual abilities. An older person with vision loss may also have mobility issues, hearing problems, joint pain from arthritis, *and* memory loss. These conditions interact with each other to increase both the level of disability in the person and the level of danger in the house. As a result, older people are increasingly at risk for accidents, such as falls, trips, cuts, and burns.





Aging with an Intellectual Disability

People aging with intellectual disabilities experience all of the same challenges as other older people. However, aging with a pre-existing disability is also a unique experience. Critical differences may place older people with intellectual disabilities at additional risk. Older people with an intellectual disability may not always recognize potential hazards in their homes or realize when a familiar activity has become dangerous. Seniors with intellectual disabilities may also have more difficulty learning new coping behavior, such as how to climb into a bath tub safely or how to reach or lift a pot that has become too heavy. Similarly, they may develop coping strategies that are not safe, such as using the towel rack as a grab bar. These behaviors need to be unlearned and that can be difficult.

Many people with intellectual disabilities also have communication difficulties. These difficulties affect an individual's ability to verbalize any increasing problems they may be having in doing things in their homes. And, like many seniors, they may be experiencing memory loss.

Older people with intellectual disabilities generally do not have the choices that other seniors have. They may have fewer financial resources than other older people. While they rely heavily on family members, most older people with intellectual difficulties do not have children to move in with and they may have fewer people outside of their families to rely on for assistance. Life care, assisted living, and living alone with help coming into the home are options that are generally not available. All of these factors limit their housing options to two choices: remain in a group home, supported apartment, or family residence with inadequate physical supports or be placed in a nursing home.

People with intellectual disabilities are both similar to, and unique from, other people who are aging. Seniors with intellectual challenges may be more vulnerable in their home environments. As a result, it is particularly important to make the homes where they currently live as safe and supportive as possible *before* they have an accident. This will allow them to "age in place" for as long as possible.

Where the Information Came From

We asked people who are aging with an intellectual disability to help us develop this manual and web site because of their unique position in the world of aging. The guiding philosophy behind these resource guides is that the people who live and work in a particular setting are the true experts on that place. Consequently, we went directly into the homes of people who are aging with an intellectual disability. We assessed over 125 individuals and the 81 group homes, supported apartments, or private family homes where they lived. During these assessments, we spoke with people about the problems they were having in their homes. We also watched them perform many everyday activities and tasks, and evaluated their ability to do these things safely. In addition, we looked for current or potential hazards in the home. We took this information and compiled a list of common problems



in the home environment that can undermine safety and independence. We then developed a set of recommendations for correcting these problems through home modifications. These practical solutions to everyday problems follow in the subsequent pages of *A Home for Life*.

Notes





One of the supported living homes assessed during this project.



Flat neighborhoods are ideal for older people.



Homes on hills and narrow driveways create problems for older people and wheelchair users.



Flat, wide, and level driveways are safer and easier to use—both in and out of a wheelchair.

Forward

As we mentioned in the Introduction, the goals of this resource guide are to:

1. describe the wide range of safety concerns that exist in the homes of people who are aging with an intellectual disability.
2. provide guidelines for correcting or reducing these problems.

When we present this information in the coming sections, we will be following the path of typical older people as they experience their homes. We will start with the outside: walkways, yards, decks, and patios; continue through the front, side and back doors; go through the halls, and the living and dining areas; climb up and down the stairways; and check out the bedrooms, bathrooms, kitchens and laundries. In each area we will identify places and situations where the older people we assessed had difficulty performing everyday tasks, and where they encountered safety hazards and threats to independence. Whenever we can, we will make suggestions for home modifications and assistive technologies to correct or reduce these problems. (For readers unfamiliar with the term, we consider an "assistive technology" to be any device or piece of equipment that makes a task easier to do.)

Getting Into The Home

Since people need to get into their homes safely and independently, the path to a safe and supportive home for seniors—and for all people—begins with the walk from the street, sidewalk, or driveway to the door. Walkways, driveways, and front, side and rear yards all need to be accessible, easy to walk on, and free of tripping hazards. In reality, few are. We noticed many problems along this path. In fact, there were so many concerns that we are dividing this "journey" to the front door into three stages: getting to the entry steps; climbing the steps; and going through the door and into the home. We will then discuss the range of problems we saw at each one.

1. Reaching the Entry Steps

The first leg of the journey starts with the trip from the car or sidewalk up to the front steps. Here are some things to consider along this route:

- *Driveways should be wide enough*
- The driveway should provide sufficient space for:
 - transferring safely from the vehicle to the wheelchair or driveway.
 - unfolding and setting up a walker or wheelchair when exiting the car or van.
 - walking or wheeling alongside the vehicle.

- *Driveways should not be steep*

J It is hard for older people to walk up and down a steep incline. Climbing out of a vehicle and onto an inclined surface is also difficult and dangerous. Wheelchair users have a special problem with sloping surfaces. It is physically taxing to roll uphill and the chair could easily roll down the drive if the incline is steep or if the person forgets to engage the wheel lock.

- *Driveways should have a smooth surface*

J Gravel, cinders, and grass driveways are hard to walk on.

- Cracked and chipping concrete and macadam, uneven brick pavers, and ruts in the driveway are all tripping hazards.
- People using wheelchairs, scooters, and walkers need a smooth, level surface to wheel along.
- *Driveways should not be much higher than the adjacent ground*
 - The area next to the driveway should be graded up to the drive and free of ruts, so people do not trip or lose their balance when they walk onto this area from the driveway.

- *The walk from the drive to the front steps should also be smooth, wide, not too steep and free of obstacles*

- Cracked, chipped and uneven sidewalks are tripping hazards, as are gravel, and uneven bricks and flagstones. These surfaces also make it hard—or impossible—to roll a wheelchair.

J As with driveways, older people have a difficult time walking up sidewalks that are too steep.

- Bushes and shrubs that hang over the walkway can block the path. When trees and shrubbery get wet from rain or snow, people get wet when they brush or roll against them. Grass and weeds that grow between sidewalk cracks or over the edge of the walkway are tripping hazards.

- *Steps along pathways can be hazardous*

- Older people, and people with disabilities, may find it hard to climb steps on the walkway to the entry. Steps are major barriers for people who use wheelchairs and walkers.

- *Transitions between different surfaces should be smooth*

- Pay attention to where a ramp or a walkway transitions to another surface, such as the driveway, the lawn, or another type of material. Tripping over small ledges, cracks, and fissures between surfaces can be a problem.



Flat, on-grade entries are good for everyone.



Bushes block access when they extend over the walkway.



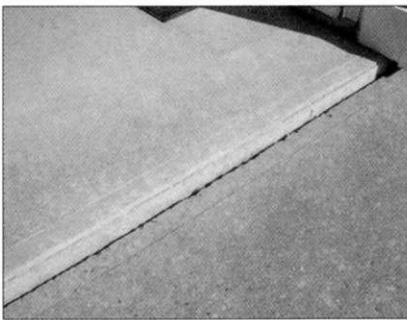
All steps need double railings.



Even single steps should have railings.



Small, curved landings are dangerous.



A small step is easy to miss—especially for people with vision loss.



Plank railings are hard and uncomfortable to grasp.



Cylindrical railings are easier to grasp.

Driveway and Walkway Design Tips

- Widen driveways to accommodate vehicles, people, and wheelchairs. A minimum width of 13 feet is necessary to accommodate a van and provide a walking aisle on both sides. If the van has a side lift for a wheelchair, then a minimum of 19 feet is necessary.
- Try to level the section of the driveway where people enter and exit the vehicle.
- Repair or repave all uneven walkways.
- Re-grade walkways to create a more gradual incline. If this is not possible, install a cylindrical railing on each side of a steep or sloping walkway.
- Trim back or remove all shrubbery and grass that encroaches on the sidewalk.
- Consider removing steps and re-grading the walkway. If steps cannot be removed, install railings on both sides.
- Repair or repave the transitions between different walking surfaces. They should meet as smoothly and as seamlessly as possible.

2. Climbing the Front Steps and Getting to the Door

Once people get to the front steps from their vehicle, the street, or their building's parking lot, their next challenge is climbing those steps safely. We saw many front and rear step problems during our survey of peoples' homes. (In fact, we noted a total of 98 current or future hazards in the 81 homes visited.) Some of these problems were with the steps while others concerned the railings.

- *Typical step problems included:*
 - Steps with unequal riser heights.
 - Risers that were too high.
 - Single steps that were hard to see and easy to overlook.
 - Steps that were small and easy to trip over.
 - Treads that were worn out, deteriorating, uneven, or chipped.
 - Stoops, landings, or porches that were too narrow.
 - Steps and stoops that were circular or curved.
- *Railing problems were more numerous and included railings that were:*
 - Not there.
 - Only on one side of the steps.
 - Hard to grasp (for example, a plank board rather than a cylindrically shaped rail).
 - Too far away from the path to the door. People could not reach them when they climbed the steps.
 - Damaged or loose.
 - Not long enough.
 - Too close to the house to grip properly.

The problem we noticed most frequently was that there was only one railing when two were needed. People with physical limitations need support going up and down the steps. The best way to get this support is by holding onto a secure railing with the stronger or more dominant hand. This is particularly important for people with a paralysis, a paresis (weakness), or other limitation in their arms or hands.

Apartment dwellers often faced two additional concerns. First, the steps into the building did not have railings (or only had one). Second, if there were steps inside the lobby, they frequently lacked railings as well.

Design Tips for Outside Steps and Railings

- Call attention to single steps by installing a railing.
- Step risers should be low and equal height. (8 inches is the standard riser height but consider 6-7 inches instead.)
- Build rectangular steps. Curved or semi-circular steps can be dangerous.
- Steps should have smooth, even treads.
- Low-rise steps may need to be ramped.
- All steps should have double railings.
- Railings should be cylindrical and easy to grip.
- On wide steps, railings should be installed close to the most direct path to the door so they are within easy reach.
- If possible, create an on-grade entry. (This is an entry without steps or lips.)

• *Ramps*

As people become progressively more frail and lose their ability to walk and climb stairs, more and more housing for the elderly will require ramps. Ramps can be helpful to many people, not just those using wheelchairs. While not all of the houses we surveyed had ramps, many did. Unfortunately, even ramps can create problems if they are poorly designed.

- *We observed ramps that:*
 - Were too narrow.
 - Did not have a lip or curb at their side edges.
 - Lacked sufficient turning space when there was a 90 or 180 degree turn.
 - Ended at a landing that was not deep or wide enough for a wheelchair.
 - Did not have double railings.
 - Had cracks, chips, or fissures where they met the walkway or landing.
 - Were too long. This made them impractical and difficult to use.

Long ramps can create problems for people who use walkers or who have stamina problems because they increase the length of the walk to the front door. For these people, long tread, low rise steps may be more helpful. They



Here are two more examples of on-grade entries (above and below)



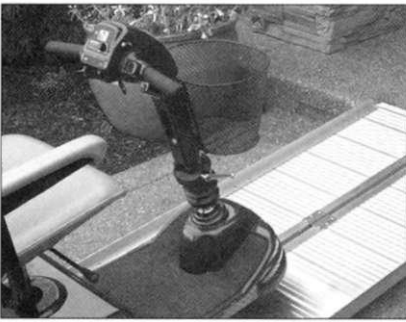
Cracked and chipped surfaces are easy to trip over.



Transitions between paved surfaces should be smooth.



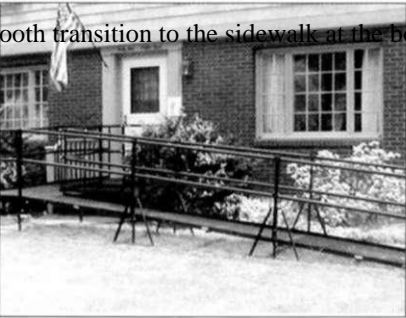
A well-designed ramp makes the home accessible.



Portable or "suitcase" ramps (*above*) and modular ramps (*below*) can be temporary solutions to accessibility problems.

- Ample turning space (5 feet by 5 feet for a 90° turn).

- A smooth transition to the sidewalk at the bottom and to the porch or



High thresholds at doorways are hard to negotiate.

are not difficult to climb and the deep tread (the level part of the step that people stand on) provides space for resting the walker. Make sure the tread is long enough and deep enough to accommodate all four legs of a walker or any other assistive device. Determine the correct height of the steps by assessing the needs of the user and consulting a physical therapist.

Ramp Design Tip

- Don't get confused between modular and portable ramps. A modular ramp is custom built, with prefabricated sections that are installed at the site. A portable ramp is usually aluminum and can be moved from site to site. However, they are heavy and require two strong people to transport them. Portable ramps are temporary solutions and are good for mounting only one step. A standard step is 8 inches high and requires an 8 foot ramp. If there are more than two steps, a ramp of over 16 feet is needed. (A minimum of one foot of ramp is needed for every inch of height- a 12:1 incline.) This is too long and too heavy for a portable unit. Making the ramp steeper is dangerous and can be scary or upsetting to someone in a wheelchair who is being pushed up a ramp with an incline steeper than 12:1 .

- *When the time comes to install a ramp, it should have:*

- A non-skid surface—ramps with smooth surfaces become slippery in the rain and snow.
- A level resting place every 25-30 feet (for lengthy ramps).
- Cylindrical railings on both sides.
- A proper width (36" between the two railings).

landing at the top.

- A landing that is deep and wide enough for a large wheelchair.
- If there is an entry at the top of the ramp, additional space is necessary for opening the door.
- A curb or lip at the side edges to prevent the wheel of the chair from veering off the ramp.

3. Getting Through the Door

Getting through the front or side door easily and safely is the final entry challenge. We saw many examples where the doors and doorways created difficulties for older people when they entered their homes.

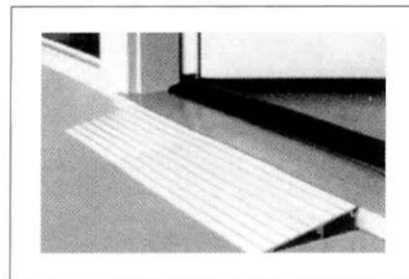
- *Here are some typical door and doorway problems:*

- Doorways with poor lighting.
- Doorways that are partially blocked by trees or shrubs.
- Doorsteps that are too steep or too hazardous. Some people need to steady themselves as they climb up the step and walk through the doorway.

- Locks that are broken, difficult to turn, or hard to reach.
 - Self-closing doors that close too soon and hit the person going through the doorway.
 - Doors that are too narrow.
 - Doors that are too heavy.
 - A storm door that hinges on the opposite side of the main door's hinges. This can make it hard to open or unlock the main door.
 - Doors that stick.
 - Thresholds or sills that are broken, splintered, or loose.
 - Thresholds that are too high to step over safely or for a wheelchair to roll over. (*This was very common.*)
 - Broken metal door frames.
 - Peepholes that are too high.
 - Sliding doors that are difficult to open, close, lock and unlock.
 - Sliding door tracks that are too high. They are difficult to step or wheel over.
 - Broken screens.
 - Doormats and entry rugs in poor condition or without non-skid backing. They are tripping hazards.



Doors with hinges on opposite sides can be hard to unlock and open.



A threshold ramp improves accessibility at the door.



A grab bar can help people get up that last-and often higher-step.



Wide doors for access and sidelights for security help everyone.

Door and Doorway Design Hps

Here are some suggestions for correcting these problems:

- Make sure all doors and stairs are well-lighted.
- Trim back shrubbery from all steps and doorways.
- Install a vertical grab bar at the side of the door for frail people who need to pull themselves up a high doorstep.
- Replace the high thresholds with flat ones or install a threshold ramp.
- Plane any door that is difficult to open.
- Widen a door to 36 inches (if necessary and possible).
- Consider a press plate or remote controlled automatic door opener.
- Install a closer on storm doors that closes the door slowly.
- Make sure the hinges on storm doors and main doors are on the same side.
- Install lever door handles.
- Have peepholes at the proper height so short people and people in wheelchairs can see who is at the door (or install a window sidelight or a low peephole with a wide angle view).
- easy to use locks, perhaps a key card lock.
- Install track covers or threshold ramps on both sides of a sliding door.
- Remove door mats that are worn or slippery. Install one with anti-skid backing.



Automatic door openers are good for people with hand limitations.



Sensor lights are activated by motion and improve safety and security.



Raised flower beds make gardening easier for people who use wheelchairs or have bad knees and backs.



Smooth, paved walkways make the entire property accessible.

• *Doorbells*

Even something as simple as a doorbell can create problems. For example, we saw homes where the doorbells:

- Did not exist.
- Did not work.
- Were not loud enough.
- All sounded the same. It was difficult to tell if it was the front or the side bell ringing.
- Could not be easily reached (the storm door or shrubbery was in the way or the bell was installed too high).
- Were not located in a logical or easy-to-find location.

Most doorbell problems can be corrected easily and often inexpensively by installing new units in easy-to-reach locations, or consider an intercom.

4. General Outside Considerations

- *Driveways, parking lots, garages, trash areas, and all exterior spaces that people use at night should be well lighted.*
- Older people need more light. They also have a harder time adjusting from one light level to another. Walking from a well lighted house into the dark can be difficult and dangerous. A well-lighted exterior helps balance the light levels between the inside and outside of the house.
- *Mailboxes should be accessible.*
- We saw several examples of mailboxes that were too high and the residents could not reach inside of them. We also saw houses where bushes blocked the mailbox. Mail slots in the door are a good idea.
- *Flower gardens should be accessible.*
- As people age, it becomes harder for them to bend. Consider building a raised flower bed if the older person is a gardener.
- *The path into the yard and around the house should be paved and as level as possible.*
- As people age, getting out and going places becomes increasingly more difficult. As a result, the world of the older person gradually shrinks. This is particularly true for people who use wheelchairs and other mobility assists. Walking through the yard and around the property is a good way to get exercise, fresh air, and visual stimulation. A smooth, flat, and unobstructed walkway can make a stroll around the house possible.
- Make sure the walkway is wide enough for a wheelchair (36" - 42" minimum).
- Make the pathway interesting with plantings, benches, bird feeders, etc. This will lure people out for a walk.

- Keep hoses, trash cans, garden tools, and other potential hazards off to the side of the path.
- *Decks and patios should be accessible and unobstructed.*
- Outdoor sitting areas should be safe and accessible. The surface should be smooth (no cracked or uneven bricks, flagstones, or pavers) and the path to the seating should be free of tripping hazards.

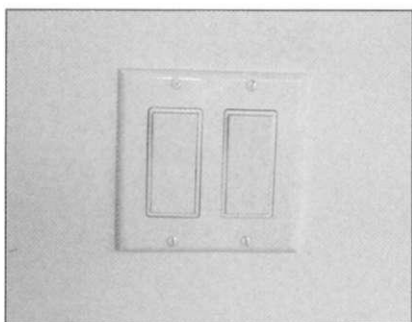
Notes



All patios and pathways should be free of tripping hazards.



Be careful with spaces between pavers. They can be tripping hazards.



Rocker switches are easier to use than toggle switches.



Smooth transitions between flooring surfaces eliminate a tripping hazard.



A handrail along a wall provides support for people who are unsteady on their feet.



Spaces between carpet runners can be tripping hazards.

Halls, Stairways, and Transition Spaces

Once they have successfully entered their homes, older people need to move through them as safely and independently as possible. Halls, stairs, and transition spaces need to be secure and accessible. Our home assessments found numerous problems in these areas, particularly for people who were frail or were using a wheelchair, walker or other mobility device.

1. The Entry Foyer and Interior Hallways

Foyers and hallways are important passageways. To prevent falls and to encourage mobility and safe movement through the home, these transition areas should have:

- *Good lighting*
 - Light switches at the entrance to all halls. People should never have to walk through a darkened hall to turn on a light.
 - Night lights, especially in the halls that lead from the bedrooms to the bathrooms.
 - Switches within easy reach.
- *Low (or no) thresholds or door sills*
 - A threshold ramp if a threshold is high and cannot be replaced.
- *Handrails in hallways*
 - Handrails are helpful for the physically challenged and people who are unsteady on their feet. They can also guide someone with poor vision and assist frail wheelchair users. (When people can no longer wheel their chairs, they can pull themselves along the handrail.)
- *Supports at steps into "sunken" rooms or between rooms on slightly different levels*
 - Ideally these steps should be ramped. If there is not enough space to build a ramp, install a grab bar or hand rail at the step. While this will not help people in wheelchairs, it will help people who have problems with stairs. They can grab onto the bar or railing and pull themselves up the step or steady themselves as they step down.
- *All tripping hazards removed or corrected*
 - Runners, throw rugs, and mats that are in poor condition or do not have anti-skid backing should be removed. When using plastic runners, make sure they are smooth and carefully tacked down.
- *No unnecessary equipment, furniture, or clutter in the space*
- *Smooth transitions between different flooring surfaces, where carpet meets tile or linoleum*
 - Check for cracks and chips in the tile or linoleum, frayed or raised carpet edges, etc.

- *Even floor surfaces*

- We saw bumps in the floor when there was a change in surface material or at the points where additions or newer construction joined with the original structure. Even a small lip between surfaces can be a tripping hazard or a barrier that is hard to roll over in a wheelchair. Install a mini ramp on any lip over a half inch high.

2. For Wheelchair Users

If there is a person using a wheelchair in the home, then special considerations and modifications may be indicated.

- *Accessibility can be increased by:*

- Widening doorways and hallways.
 - Try to create 36 inch wide doorways and 42-48 inch wide halls whenever possible.
 - Angling doorways and hallway corners by 45 degrees.
 - This decreases the turning angle for a wheelchair or a scooter.
 - Moving a doorway so it is opposite another door or open area.
 - This increases maneuvering space.
 - Installing swing clear hinges on doors.
 - This hardware lets the door swing open and fold back along the sidewall so the depth of the door does not reduce the width of the clear passageway.
 - Removing or reducing the height of thresholds and door sills.
 - Smooth flooring.
 - Installing a stair lift, platform lift, or an elevator.
 - A stair lift is the least expensive of these options. However, with these lifts, the person's wheelchair or other mobility device cannot go up the stairs. A wheelchair is needed on both levels.
 - With a platform lift or an elevator, the person rides in the wheelchair from floor to floor. There are vertical platform lifts, which are small elevators, and incline lifts, which carry the wheelchair and occupant up a flight of stairs.
- Make sure the stairs are wide enough for any lift. (For a stair lift, make sure there is enough room between the wall or railing and the person's leg.)

Design Tip

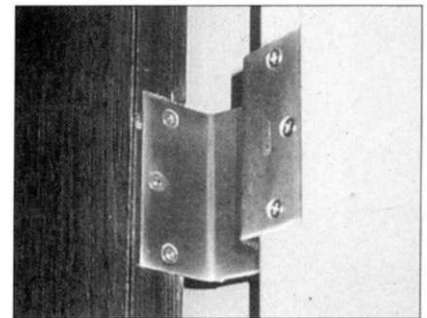
- In some situations, it may be possible to reduce the size of a closet in order to increase the size of the doorway. This depends on the locations of the closet and the doorway.



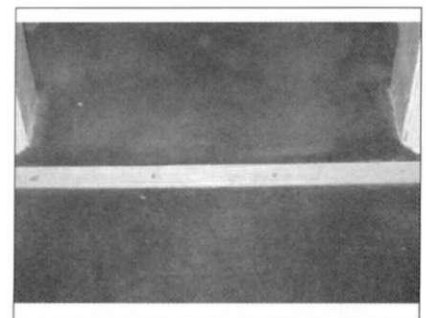
Wide halls and angled doorways increase wheelchair access.



Curved walls make it easier to turn a corner in a wheelchair (and cuts down on damage to the wall from the chair).



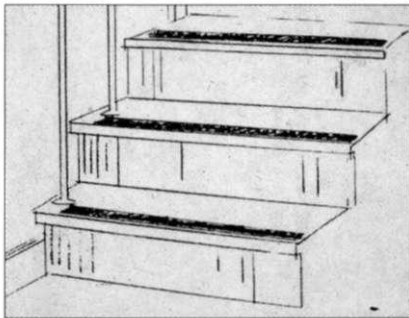
Swing clear hinges can increase the opening width of a doorway.



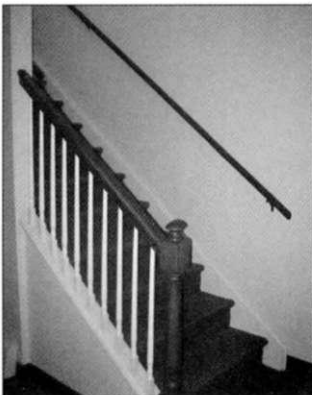
A mini-threshold ramp will eliminate a small interior step.



Stair lifts make it possible for people with mobility problems to get to another level.



Anti-skid strips make stairs less slippery and define the edge of the stair tread.



Double railings provide support for going up and down the stairs.



Second railings are a good idea for all stairways—especially to the basement.

3. Stairs

Stairs can be very dangerous. During our tours, we saw many situations where stairways compromised safety.

- *All stairs should have:*

- Good lighting, especially at the top and the bottom of the stairwell.
- Light switches at the top and bottom of the stairwell.
- Anti-skid strips at the edge of each stair tread.
 - These strips make the steps less slippery and also clearly mark the edge of the stair tread. This can help prevent falls. (But make sure they remain securely glued down.)
- Treads that are all the same size and in good condition.
- Carpet or stair tread pads that are not frayed or torn and are firmly tacked down.
- Top and bottom steps that stand out.
 - Consider marking the top and bottom stair to alert older people to the fact that the stairway is ending. This sends a cue telling them to prepare for a transition to the floor or landing. Marking the edge of the steps is also helpful for people with vision loss.
- Secure handrails.
- Handrails on both sides of the stairs.
 - The lack of a rail on both sides of the stairs was a very common problem. Many people have only one good or strong hand. As mentioned previously, they need a railing on one side to hold onto while climbing the stairs and a rail on the other side to grasp with their good hand when they descend the stairs.
- Handrails on the stair landings so there is always something to hold onto.
- A grab bar at the top of the stairway to hold onto during the transition from step to floor.
- Padded ceiling beams on low overhangs at the bottom of the stairs to prevent serious injury if people hit their heads.
 - Make this padding brightly colored to remind tall people that it is time to duck their heads.
- No telephones on stair landings.
 - People could trip or fall down the stairs in their haste to reach a ringing telephone.

4. Closets

Closets are important spaces—both physically and emotionally. A properly organized closet allows people to see and reach their belongings safely and independently. A neat and accessible closet can also provide a sense of order and control over the environment.

Closets with sufficient size and organization decrease clutter, which is a tripping hazard, and make the home look less chaotic.

Closet "Don'ts"

During our assessments we noticed that many older people had difficulty getting clothes and other personal belongings out of their closets.

- Typically, closet difficulties were caused by:
 - Excessive clutter.
 - Shoes lying around the closet floor. They are tripping hazards.
 - The lack of a closet light.
 - People have trouble seeing/finding their clothes and possessions in the dark.
 - Poorly placed light switches or pull cords (if there was a light).
 - Closet poles and shelves that are too high.
 - Clothes and other belongings are hard to reach. This is a very common problem as women tend to be less tall than men and many older people become shorter as they age.
 - Furniture and clutter blocking the path to the closet.
 - Sliding doors that are off their tracks.
 - Recessed pulls on sliding doors that are hard to grip.
 - Door handles that are difficult to turn.
 - Closet doors that stick.

Closet Design Tips

Properly designed closets should help the older person to select his or her clothes with an efficient "get in, see, choose, and grasp" sequence.

Here are some ways to make closets easier to use:

- Install lights. Consider automatic lights that turn on when the closet door opens and turn off when it closes. (These devices work only with hinged doors.)
- Lower the closet pole and shelf.
- Reorganize the closets, adding storage where possible.
- Add a shoe rack—either on the floor or on the back of a hinged closet door.
- Fix sliding doors so they stay on track.
- Install "C" pulls on a sliding closet door. People can then grip the pull to make the door easier to slide.
- Install lever handles on hinged doors. They are easier to grip.
- Reorganize the room so furniture, hampers, trash cans, etc. do not block access to the closet.
- Plane any door that is sticking.



Cluttered, overcrowded closets look messy and can be unsafe.



An organized closet with a lowered clothes pole makes it easier to find and reach clothing.



Sliding doors are easier to open with a "C" pull handle.



This button turns on the closet light when the door is opened and off when the door is closed.



Bumping into a sharp edge, glass top table can be painful.



Older people have trouble climbing out of low seating with soft cushions.



It can be difficult to get up from an armless chair.



It can be difficult to walk or wheel around a room with a lot of furniture. (The rocker glide is particularly hazardous.)

Living, Dining and Family Rooms

With the exception of basement recreation rooms, we found that the social areas—the living, dining, and family rooms— caused fewer difficulties than other places in the home. Inadequate lighting, inappropriate furniture, and clutter were the most common problems in these rooms.

1. Lighting Concerns

We noticed inadequate lighting in approximately one out of every four homes that we visited.

- *The following lighting issues are fairly typical and easily correctable:*
 - Insufficient number of light fixtures.
 - Bulbs that are either missing or not bright enough.
 - No light switch at the entrance to the room.
 - As we have noted before, walking across a dark room to turn on the light can be dangerous. An older person with poor vision or balance problems could easily trip over something he or she did not see.

2. Inappropriate Furniture and Accessories

Most of the homes that we visited were furnished with a limited budget. Many were also furnished when the people living in them were considerably younger. As people age, their abilities change. Furniture that once worked fine may now cause some problems.

- *Here are some furniture problems to correct or avoid:*
 - Furniture with hard, sharp edges.
 - People can hurt themselves when they bump into sofas, tables, and countertops with sharp edges and corners.
 - Seating that is difficult to get in and out of.
 - Chairs and sofas that are:
 - Too low.
 - Too soft. People sink into them and have trouble getting out.
 - Armless or have arms that are too low, too soft, or do not extend out far enough to provide sufficient leverage for "pushing off" support.
 - Furniture that older people could stumble or trip over.
 - People collide with furniture when they lose their balance, do not see the piece of furniture clearly, or misjudge its exact location. This is a particular concern for people with walking, balance, and vision problems. Decreased peripheral vision and depth perception are special concerns among the aging and this can cause older people to misjudge the edge of a piece of furniture.

- *Here are some typical stumbling hazards:*
 - Glass top or any low coffee tables, where the edge is not clearly defined.
 - Ottomans.
 - Magazine racks.
 - Rocker glides.
 - Throw rugs and area rugs.

Furniture Tips:

- Make sure the tripping hazards listed above are removed from the room, or at least removed from walking paths.
- Put "bumpers" or padding on sharp edged tables.
- Replace glass top tables with wooden tables with rounded and very distinct edges (so people can clearly see the edge of the table).
- To help people get in and out of their seats:
 - Install thicker, firmer cushions for extra support and height. A wooden board under the cushion will also make the seat firmer.
 - Relocate a favorite seat to an area of the room where a grab bar can be installed on a nearby wall. The frail person can then grab the bar and pull himself or herself up from the chair.
 - Install a ceiling height grab pole near a favorite seat. These devices are attached to the floor and the ceiling and provide support so people can pull themselves up from a chair or a bed.
 - Install furniture risers under the legs of the chair. This will raise the chair three to five inches off the floor and make it easier to get in and out.
 - For very frail seniors, consider buying chairs with automatic, rising seats. These seats rise up to assist someone sitting down or standing up from the seat. They can be purchased in both dining and lounge chair styles.
 - Replace soft, low seating with firmer, higher seats that have strong arms that extend to the end of the chair. This will provide the support needed to get in and out of the chair more comfortably.

3. Clutter

Clutter is a chronic problem in many households. The houses and apartments that we visited during this study were no exception to this frequent concern. We saw homes where there were just too many things lying around. These included furniture, magazines, decorations and display items, electrical and telephone cords, clothing, videos, storage boxes filled with assorted possessions, etc. While clutter creates a sense of disorder, we realize that people do have the right to maintain their homes the way they want (at least if they are living alone or have a housemate with a similar tolerance for clutter).

Nonetheless, we are concerned with clutter because it is hazardous. Clutter places people at risk for tripping and falling and can obstruct emergency egress from the house or apartment if there is a fire. Clutter can also make



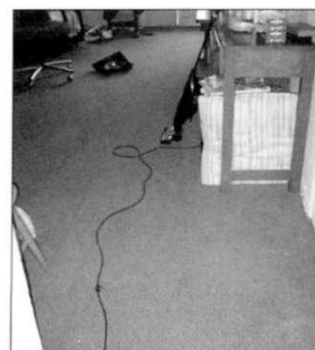
A strategically placed grab bar can help someone get out of a chair.



Furniture risers can also make it easier to get in and out of a chair.



Automatic rising seats also help frail people to get in and out of a chair.



Electric cords are tripping hazards.



Throw rugs with long fringe and no rubber backing are also tripping hazards.

it hard for people with memory or intellectual difficulties to find things. This can increase the tension and frustration levels in the home.

Clutter Control Tips

Take a careful look around the house or apartment. Make appropriate efforts to control clutter by:

- Reorganizing rooms.
- Increasing storage space with shelving, closet organizers, etc.
- Removing furniture that is not used or needed.
- Relocating electrical and telephone cords.
- Initiating a good old fashioned house cleaning and purging. (It may be easier to convince people to part with their belongings if they feel they are going to a good cause—a church or community yard sale, disaster victim relief, etc.)

Notes

Bedrooms

The bedroom is probably the most important psychological space in a person's home. Bedrooms are refuges, sanctuaries, and the places where people should be most able to be themselves. Because of their psychological significance, it is important for older people to be as comfortable as possible in their bedrooms. They should be able to decorate, organize, and use the rooms in the way that they want—and to do these things safely and independently. Basically, the bedroom should work for the person.

When we did our tours and assessments, we noticed a wide range of problems in older people's bedrooms that interfered with independence and potentially compromised safety. The most common problems concerned furniture, lighting, windows, clutter and storage, and wheelchair accessibility.

1. Furniture

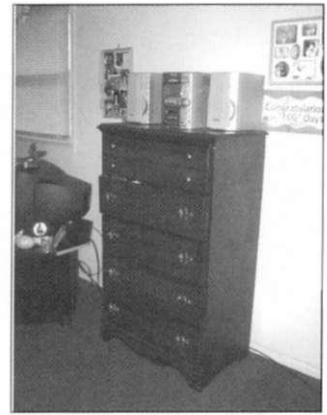
Typical furniture problems focused on beds and dressers. These included:

- *Dressers*
 - People could not reach or retrieve items from bottom drawers. This was the most common bedroom furniture problem.
 - It was difficult to see into or retrieve clothing from the top drawer. People were too short and/or the dresser was too high.
 - The dressers were too small. Clothes and other possessions did not fit inside.
 - Drawer pulls were hard to grip.
 - Drawers were broken. (A frequent finding.)
 - Drawers were stuck and hard to open.
- *Beds*
 - In a number of homes, people had difficulty getting in and out of bed. The beds were either too low, too high, or the people were too frail.
 - People could (or did) fall out of bed.
 - In one home we noticed that the bed was too short, in another it was too small, and in a third the headboard was loose, which could be dangerous if it fell on the person in the bed.

• *Other Furniture Concerns*

Furniture placement was also a problem in some bedrooms:

- The furniture blocked the window, the closet door, or other pieces of furniture.
- There was no bedside table, or
- The table or light stand was too far from the bed.



For people who are short, it can be difficult to reach clothing in the top drawer of a high dresser.



It can also be difficult for older people to bend down and get items from the bottom drawer of a low dresser.



Furniture risers can also make it easier to access the bottom dresser drawer.



"C" pulls make dresser drawers easier to open



Pad sharp edges on bedroom furniture to make them less dangerous.



Ceiling-to-floor grab poles can help frail people get out of bed.



Grab bars by the bed can also help people climb in and out of bed.



This is another version of a floor-to-ceiling grab pole.

Bedroom Furniture Tips

Here are some suggestions for correcting typical furniture problems in older people's bedrooms:

- Raise beds with furniture risers or an extra boxspring. This will make it easier for taller people and people who need that extra boost to get in and out of bed.
- Install bed rails. These devices help people get out of bed and prevent them from falling out as well.
- Purchase an electric bed that can be raised or lowered. This also makes it easier to get in and out of bed.
- Tighten or remove all loose headboards.

- Install a floor-to-ceiling grab pole or transfer aid to hold onto when getting in or out of bed.

Buy bureaus that have legs or place furniture risers under dresser legs. This will raise the dresser and make it easier to reach the bottom drawer.

Lower dressers that are too high by trimming the legs.

- Repair or plane dresser drawers.
- Make sure drawers lock into place so they do not fall out on someone's feet.
- Install "C" or "U" shape pull handles on drawers to make them easier to open.
- Reorganize furniture so it does not block the access to the closet or the window.
- Pad sharp corners or edges on beds, dressers, desks, etc.

2. Lighting

Lighting was the most frequently observed bedroom problem. Fortunately, lighting deficiencies are relatively easy and inexpensive to correct.

• *Lighting difficulties included:*

- There was no bedside light.
 - Note: This problem was quite common. We found it in 40% of the homes we visited. The safety implications for this are significant. People should be able to turn on a light if they have to get out of bed at night. Walking across a dark room is just not safe.
- The bedside light existed, but was not easily reached.
- The bedside lamp was broken.
- The overall light level in the room was inadequate. (This was also very common.)
- The light was difficult to turn on.
- The light switch was hard to see at night.

Lighting Hps

Correcting these problems is fairly straightforward. Here are some recommendations:

- Provide a bedside light. Touch or "clap-on" lights are easy to operate.
- Attach an add-on switch to an existing lamp. This makes the switch easier to reach and use.
- Purchase a 10-x module that can be used to turn a light on/off with a remote control from the bed.
- Move the light closer to the bed.
- Install a ceiling light connected to switches at both the door and the bedside.
- Purchase a luminous light switch that glows in the dark.
- Install night lights in bedrooms and along the path to the bathroom.
- Add more lights and/or brighter light bulbs.
- Install a motion detector light to illuminate the path to the bathroom at night.
- Make sure the switch plate contrasts with the wall. A white plate on a white wall can be hard to see.

3. Clutter and Storage

Clutter, and its consequences, was also discussed in an earlier section of this manual. While we occasionally saw clutter in people's living and dining spaces, it was much more common in their bedrooms. Nearly a quarter of the bedrooms that we assessed were cluttered or needed more storage. While clutter makes the room look messy and chaotic, the real concern is that people will trip over the clutter or will not be able to find things they need.

Bedroom Clutter Control

- *Bedroom clutter can be controlled with:*
 - Larger dressers.
 - Larger and better organized closets.
 - Shelving for storing and displaying personal belongings.
 - Storage containers in other areas of the house, such as the attic or basement.
 - Re-organizing, sorting, and throwing things away. (The hardest solution of all!!)

4. Access for Wheelchairs and other Mobility Devices

During the assessments, we noticed that older wheelchair users had accessibility problems in their bedrooms. Access is key for safety, independence, and participation in daily life activities.



It is important to have lights that can be turned on from the bed. Many rooms, like this one, did not have them.



"Tap on" lights go on when the shade is touched. This makes them easy to use and prevents the user's hands from accidentally touching a hot bulb or bulb base.



Clutter (*above and below*) makes bedrooms messy and creates many tripping hazards.

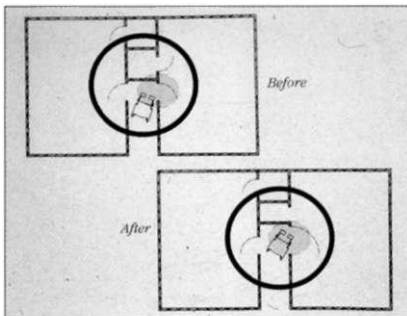




A dirty clothes hamper blocks access to the bedroom dressers.



Open-shelving at wheelchair height makes clothes accessible.



Reducing the size of a closet can make it possible to widen a doorway for a wheelchair.



A "trapeze" and grab pole, both mounted from the ceiling, help frail people to get in and out of bed.

- *The bedroom accessibility problems that we noted were fairly basic:*
 - The wheelchair did not fit through the bedroom door or it was hard to maneuver it through the door.
 - Wheelchair users could not maneuver their chairs around their room easily or make a 360° turn.
 - People had difficulty getting their clothes out of dresser drawers that were too high or too low.
 - Closet clothes poles and shelves were too high to be reached from a wheelchair.
 - Desks and computer work surfaces were not accessible.

We realize that wheelchair access requires an appropriate amount of floor and clearance space. Given the existing housing stock, this may not be an option. A move to a more accessible setting may be necessary. However, most older people want to remain in their current homes. Whenever feasible, the existing home should be adapted to make "aging in place" possible. Renovating or modifying existing space is costly but it can be done.

Accessible Design Tips:

- When feasible, widen the doorway, ideally to 36 inches.
- For rooms on a corner, angle the wall 45° and move the doorway to the angled wall.
- Install double swing hinges on doors.
- Create more maneuvering room by arranging furniture along the perimeter of the bedrooms.
- Raise dressers with furniture risers if this will make more drawers accessible.
- Build open shelving at wheelchair height for storing clothes, towels, and other belongings.
- Buy an adjustable height table for computer and desk work.
- Lower light switches and replace toggle switches with rocker switches.
- Raise electrical outlets.

5. Windows

A number of the older people in this study were unable to use the windows in their homes. This was a particular problem in the bedrooms. In 10% of the homes that we assessed, people had difficulty opening or closing their bedroom windows.

We must stress the physical, psychological, and personal safety significance of this. People need to get fresh air and cool their rooms in the warm months. They also need to feel that they have control over their personal environment. And they may need a second form of egress in case of a fire.

- *Bedroom window concerns were:*
 - Windows that were hard to open and close.
 - Windows that were difficult to lock or unlock.
 - Windows that were blocked by furniture and/or equipment.

Window Tips

Window access can be improved by:

- Planing and repairing all windows and sashes so they are easy to open.
- Installing easy-to-use locks.
- Lowering windows to make them more accessible to a person in a wheelchair.
- Replacing double hung windows with casement windows operated with a sliding push bar.
- Installing power assist windows. (A high ticket item, but very effective.)
- Making sure that double hung windows stay open without sliding down on their own.
- Relocating furniture and other items that block access to the window.
- Repairing screens.

6. Miscellaneous Problems

We also noted a number of bedroom problems that did not fit into any particular category but which should be noted.

- *Miscellaneous problems included:*
 - Electrical cords lying on the floor where someone could trip over them.
 - An insufficient number of electrical outlets.
 - Blinds and shades that were broken, hard to use, or did not adequately darken the room.
 - No support bars. Frail elders may need support when they get out of a bed or a chair, get dressed, or move around the room. Grab bars should be installed in appropriate areas.
 - Difficulty communicating with family and other caregivers. If it is not a privacy violation, install an intercom.

7. Bedroom Closets

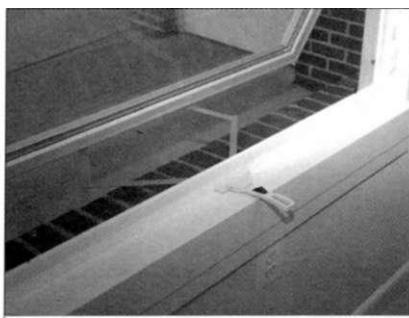
Many older people in our assessments had difficulty trying to (or were unable to) retrieve things from their bedroom closets. We saw this in over half of the houses that we visited. Please refer to pages 20-21 for tips on organizing bedroom closets to make them safer and more functional.



Long windows provide good visual access to the outside for everyone, including persons who use wheelchairs.



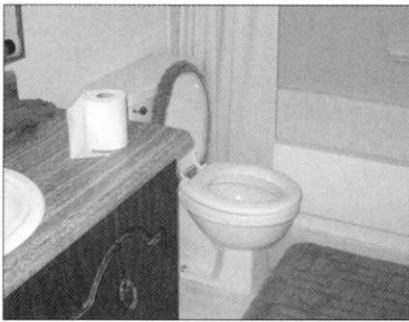
Casement windows are easier to access from a wheelchair than double hung windows. (However, crank operated windows are hard to use by people with hand limitations.)



Casement windows operated by a sliding push bar are easy to open and close.



Closets with lowered poles are easier to access for people who are short or have reaching problems.



Small bathrooms are hard to maneuver in.



Equipment and rugs without non-skid backing are tripping hazards.



A wall-hung sink provides more room for maneuvering a wheelchair.



A corner mounted sink also creates more maneuvering room.

Bathrooms

The bathroom is the number one danger zone in the homes of older people. Typically bathrooms have tight spaces, hard surfaces, sharp edges and slippery floors. When these features combine with the reduced mobility and agility that comes with aging, they create spaces that are potential breeding grounds for falls and other accidents.

When we looked at the location of problem areas *inside the home*, we found that the bathroom created more difficulties for older people than any other room. We noted over 50 types of environmental problems in the bathroom. Since there were so many concerns, we are going to list them by bathroom sub-areas. Here are some potential problems that families, older people, and caregivers should be on the look out for:

1. General Considerations

Often, the bathroom size, layout, lighting, and lack of support features can create problems for people with physical and intellectual challenges.

• *Typical examples of these general concerns include:*

- The bathroom is too small. A small bathroom makes it hard for frail older people to maneuver independently or for a caregiver to assist them. (Most bathrooms are too small to accommodate two people simultaneously.)
- The room is not accessible for wheelchairs, walkers, scooters, etc.
- There are no grab bars for people who need support to move around the room.
- There are either no hooks for hanging clothes or they are too high to reach from a wheelchair.
- The lighting is inadequate. Additional overall illumination is frequently needed for the room and task lighting may be necessary over the sink, tub, and shower.
- The lighting is difficult to access. The switch is in the hall; it is hard to reach from a wheelchair; the switch plate is broken; the switch is a toggle and hard to turn on, etc.
- Because of space limitations, furniture and/or equipment become obstacles. (For example, the hamper, chair, or a bath stool block access to the toilet or the tub.)

General Bathroom Tips

Size

If the bathroom is too small, creating more usable space can be a challenge. The best solution is to build a bigger, fully wheelchair accessible bathroom. This may be necessary now or for the future when the seniors become more frail or disabled. Bear in mind that many features of accessible design make it easier for everyone to use the bathroom, not just people with physical and intellectual disabilities. A fully accessible bathroom may be a good long term strategy even if it is not needed just yet. Unfortunately, most families and agencies do not have the financial resources or the space to do this. However, there are some modification tactics that can help make limited space more practical.

Here are some general tips for maximizing space in the bathroom:

- Remove the bathtub and replace it with a walk-in/roll-in shower.
- Install a wall hung toilet, possibly on an angled wall in the corner. This will increase the floor area and provide more room for a wheelchair, walker, or for a caregiver to provide assistance.
- Expand the bathroom into a nearby closet or an adjoining room, if possible.

Support Features

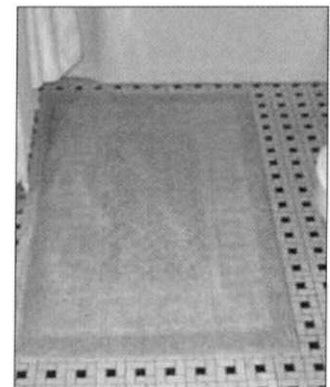
- Install grab bars in other areas of the bathroom, not just at the toilet, the shower or the tub. For example:
 - People may need to steady themselves after they climb out of the tub. Install bars in various areas of the room for this purpose.
 - Grab bars at the sink or vanity may also be necessary for people who have trouble standing for more than a minute or two.
 - Consider installing a grab bar in the area where someone dresses.
 - Grab bars now come in a range of colors. Select a color that contrasts with the wall so the bar stands out and is easy to see.
 - Many people use towel bars or soap dish holders in tubs as grab bars. This is very dangerous as they are not strong enough to support a person's weight. Determine if this is happening. If so, replace the towel bar with a grab bar and install another bar near the soap dish holder. Try to locate the bar so the person's hand reaches the bar *before* it reaches the soap dish holder.
- Make sure there are easily accessible hooks on the doors and walls for hanging clothing.
- If there is space in the bathroom, provide a chair where an older person can sit while he or she is dressing or undressing. This is particularly important for people who are weak, unsteady on their feet, or have problems with balance and mobility.
- Remove slippery throw rugs and replace with mats that have a non-skid rubber backing.
- If necessary, reorganize the room and remove or store equipment out of the way (the hamper, a bath seat, etc.).
- Install shelving for soaps, toiletries, toilet tissue, towels, etc. in an easy-to-reach and easy-to-see location. This will be helpful for people with memory, reaching, and bending problems.
- If people store their toiletries in their bedroom and bring them into the bathroom (this is common in group homes), make sure there is a place to put them that is convenient, but not in the way.



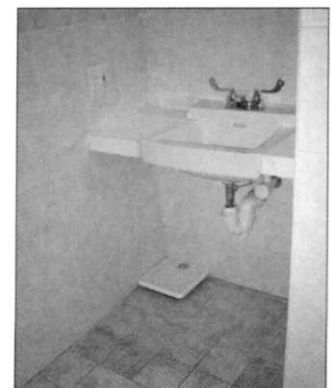
A closet built into the wall frees up space in a bathroom.



A grab bar at the edge of a vanity provides support for a frail person standing at the sink.



Make sure all rugs have non-skid backing.



This sink is wheelchair accessible and provides plenty of space for toiletries.



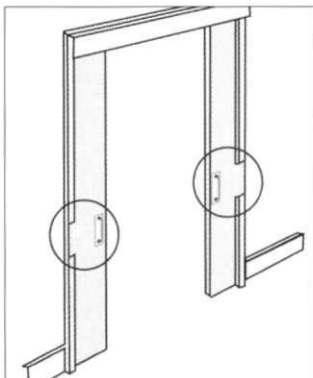
Bare-bulb lighting is harsh and increases glare.



A light in the stall makes showering safer.



Pocket doors save space but the wrong door pull can be hard to grip.



A cut-out on the frame around a pocket door creates room for an easy to grip door pull.

General Bathroom Tips (cont)

Lighting

The following tips will improve the overall visibility in the bathroom:

- Improve light levels, especially over the sink or vanity. Install ceiling fixtures in the tub and shower if these areas are dark.
- Make sure all of the light switches are easy to use. We recommend "rocker switches" rather than toggles.
- Replace round dimmer switches with vertically sliding ones.
- Locate or relocate switches to where people can easily see and reach them. Switches should be just inside the doorway for the main bathroom light, by the entrance to the tub, and over the sink for additional lighting.
- For people with vision and memory problems, install a switch plate that contrasts with the wall color. This will make the light switch easy to locate.
- Try to minimize glare. Use matte, not glossy, finishes on floors and wall tile. Do not use bare or unfrosted bulbs ("decorator bulbs"). Use globes and brightness diffusers to keep potentially painful glare to a minimum.

2. The Doorway

- *Entering the bathroom can be a problem because:*

- The bathroom door is hard to open.
- The threshold is too high. This creates a tripping hazard for people who walk and a barrier for people using wheelchairs or walkers.
- The door is not wide enough for a wheelchair or walker to pass through comfortably.

Doorway Tips

"Design Do's" to help create a safe and accessible entry to the bathroom:

- Widen the doorway.
- Angle the doorway, if necessary and possible.
- If the door cannot be angled or widened, see if it can be relocated opposite another doorway across the hall. This will provide more maneuvering space.
- Reverse the door swing or install a door with double-swing hinges.
- Explore the possibility of adding a second entry to the bathroom (perhaps from an adjacent room). A person in a wheelchair can enter through one door and exit through the other without having to make a 360° turn.
- Install a pocket door with easy to use hardware. (Note pocket doors must be of good quality and carefully installed so they stay on track.) To have a handle that is easy to grasp, you may need to cut out a section of the door frame to receive the handle. Otherwise, the door will not open to its full width. (See Illustration.)
- Lower or remove thresholds, or install mini-threshold ramps.
- Plane the bathroom and linen closet doors so they are easy to open.
- Plane and repair all bathroom doors so they are easy to open and close.
- Replace turning doorknobs with lever handles.
- If the house has locks on the bathroom doors, make sure they are easy to use.
- Install locks that can be opened from the outside if there is an emergency or if someone gets locked in and cannot remember how to unlock the door.

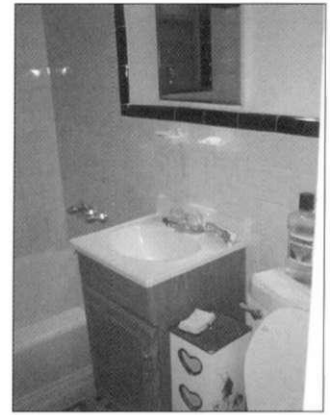
3. The Sink Area

- Typically older people have difficulties at the bathroom sink because:
 - The sink is too high for a wheelchair user.
 - There is no knee cutout for someone in a chair.
 - The person is too frail to stand at the sink.
 - The faucet is hard to use because:
 - the water temperature is hard to adjust or it is difficult to determine the hot and cold regions on a single lever faucet.
 - the water temperature fluctuates.
 - people with limited hand use may have trouble using faucets with separate hot and cold control knobs.
 - the fixtures are set too far back to be reached from a wheelchair.
- There is no room for toiletries at the sink.
- The mirror is too high, too low, or missing completely.
- The medicine chest is too high.
- The medicine chest is hard to open.

Sink Area Tips

The following design tips will make the sink area safer and more accessible:

- The ideal solution is to install a sink that can be raised and lowered. A less costly alternative is to install a sink that has knee space under it so it is wheelchair accessible or has room for a frail senior to sit at the sink in a chair.
- Purchase a sink with a bowl that curves out (or install a drop-in sink that protrudes over the edge of the vanity). People who need to sit at the sink can get closer to the bowl when they are brushing their teeth, washing their face, shaving, or rinsing their hair.
- Have plenty of storage area at the sink for toiletries.
- Wall hung sinks are easier to access in a wheelchair because they provide more knee room for maneuvering around the bathroom than a vanity with a knee cutout. Having enough knee space can be as, or more, important than free clearance space. Consider replacing a vanity with a wall-hung sink.
- Raise or lower the medicine chest so it is easy to reach.
- Install a large, long, or tilt-forward mirror behind the sink so both people who stand and people who sit in a chair can see their images.
- Install single or double lever handles that clearly indicate the hot and cold settings. Use double cueing—"hot" and "cold" labels reinforced by red and blue colors on the levers or region of the faucet for a single lever design.
- Consider a sensor faucet with a pre-set temperature. These are accessible to seniors with hand limitations and they prevent burns.
- Install anti-scald devices to control temperature.
- Cover all pipes attached to a wheelchair accessible sink so someone seated under the sink does not burn his or her legs or knees.
- Install "C" pulls on vanity drawers so they are easy to open for people with arthritis and other hand limitations.



An inaccessible sink and high mirror create problems for people who use wheel chairs.



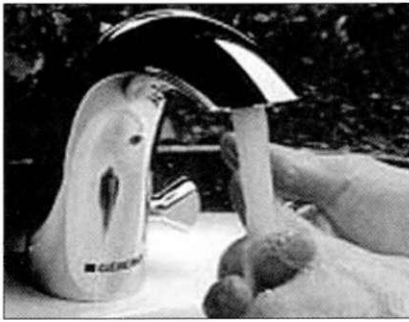
Wall-hung sinks create more maneuvering room for a wheel chair.



Sinks with protruding edges are easier to access from a wheel chair.



Lever handles are easier to use by everyone.



Easy-to-use sensor faucets also control the water temperature.



Tubs without grab bars can be dangerous.



A grab bar that takes up too much room can make it hard to climb in and out of the tub.



Grab bars should be placed wherever people need them.

4. The Tub and Shower

Bathing and showering can be fraught with hazards. A careful analysis of how to make this key activity of daily living as safe as possible is essential. The plan in any home should follow the current needs of the older person but with a watchful eye toward the future. As seniors become more frail, they will need more supports and assistance with their bathing. Different types of bathing accommodations may be necessary depending on the physical and intellectual abilities of the aging person or persons in the house.

- *Seniors have problems taking baths and showers because:*
 - It is hard to climb over the side of the tub.
 - Sitting down or standing up in the tub is a problem.
 - The clear opening between the shower doors and the frame is too narrow. There is not enough room to swing their legs into the tub.
 - The roll-in shower is too small.
 - A hand held shower head is needed, requires repair, or is hard to reach.
 - It is difficult to stand long enough to take a shower.
 - The tub or shower floor is slippery.
 - Soap, shampoo, and other toiletries are hard to reach.
 - The faucets are difficult to use.
 - Grab bars are in the wrong place or are blocked by towels and towel bars.

Tub and Shower Tips

Here are some suggestions to make bathing and showering easier:

Install a vertical grab bar at the entry to the tub to hold onto while climbing over the edge.

- Install rails in the tub area to grasp while sitting down or standing up.
- Provide a horizontal grab bar (at the proper height and location) that an older person can hold onto for support while showering.

Again, install grab bars in colors that contrast with the tile or wall.

Explore the feasibility of using:

- Side open tubs (very practical but expensive).
- A Tub Cut. This technique removes a section of the side of the tub to create a 18-34 inch wide passageway with only a 5 inch threshold above the floor. The tub can be restored to its original condition when the cut is no longer needed.
- Tubs with a wide side edge that a frail person can transfer to first before sliding down into the tub.
- Tubs with a tiled transfer seat/ledge at the foot of the tub or a transfer bench.
- Shower or tub chairs.
- Tub lifts.

- Check the condition of all shower doors and determine how easy or difficult it is to use them.
 - Remove old shower doors to increase the amount of clear opening for climbing into the tub. (As mentioned above, people also tend to use the aluminum towel rack on these doors as a grab bar. This is very unsafe.) Replace with a typical shower curtain and install grab bars in all necessary locations.
 - Older shower doors frequently come off of their tracks. This is dangerous as the door could fall on someone in the tub. In some households, the height of the shower door may also be too low for a taller person. This makes it difficult to climb into the shower. Again, consider removing the old door and replacing it with the standard shower pole and curtain.
- If there is sufficient space in the bathroom (and you have the budget), install a tiled, roll-in shower or a prefabricated modular unit that replaces the tub. (You will need a minimum depth of three feet to do this.)
- If the room is tight, consider making the entire room part of the shower. You will need an additional floor drain to catch the excess water. There are also attachable rubber "roll-over" dams that can be installed across the entry to the shower. These devices contain the water in the shower area.
- Check to see if the edge of a standard stall shower is too high to climb over easily. If so, reduce the lip to 2"-3" if it is not possible to create a roll-in option.
- Install a hand held shower. For hand held shower heads:
 - Mount the showerhead on an adjustable height track so it is easy to reach (or lower the holder for the shower head so it is accessible).
 - Make sure the shower hose is long enough for a caregiver to move it around the person being showered.
 - Select a unit that has an on/off switch on the hand held head for better, more accessible water control.
- Provide a shower caddy or a shelf for storing soap, shampoo and other toiletries within easy reach. Items placed on the edge of a tub tend to fall and bending down to retrieve them can be dangerous. (There should be a reachable shelf for someone showering and one for someone bathing.)
- Make sure there is either an anti-skid mat in the tub or shower, or there are anti-skid strips attached to the floor.



Grab bars that contrast with the wall color are easy to see and grip



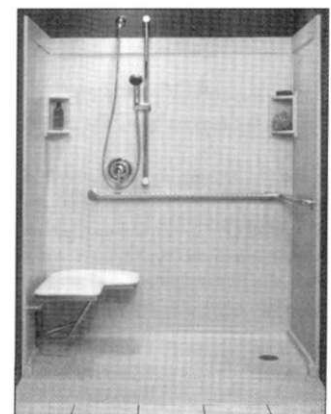
Hand-held shower heads should be adjustable height.



Single blade shower faucets, with clearly marked hot and cold zones, are highly recommended.

5. Toilets

- *Seniors and people with physical limitations have difficulties using the toilet when:*
 - Toilets are too low.
 - Support is needed to sit down and stand up from the seat.
 - There is no toilet paper holder or it is difficult to reach.
 - The seat is too small.
 - There is not enough room near the toilet for a wheelchair.



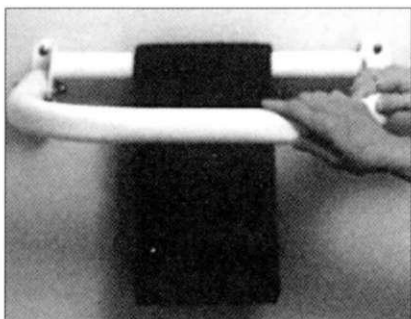
showering is easier with a roll-in, modular unit.



Grab bars by the toilet are very helpful.



Folding grab bars flip down for people who need them and up (and out of the way) for people who do not.



This folding grab bar gets installed on the wall in front of the toilet. It flips up and locks in place when needed.



Wall hung toilets save space. This one also has a grab bar that folds out and holds the toilet tissue.

Toilet Area Tips

The main problem with the toilet is that older people have difficulty sitting down and standing up from the toilet. This is because the toilet fixture is usually too low or the seat is too small. People who use wheelchairs or walkers may also have problems with accessibility. Here are some recommendations for making toileting easier:

- Move the toilet to the corner of the room if it is blocking wheelchair or walker access to the sink or tub.
- Install a wall-hung toilet. They take up less floor space. There are also models where the tank is installed in the wall. These take up even less space, but require a deep wall.
- Install a raised toilet seat. Be aware the added height and reduced toilet opening makes it more difficult for men to urinate from a standing position.
- Raise the entire toilet with a "Toilevator."
- Install toilet arms at the side for people to lift themselves on and off the toilet or
- Install toilet arms that fold down from the wall on both sides of the toilet. These units are more stable than standard toilet arms. Because the arms fold up and down, other members of the household can raise them out of the way when they are not needed. These units also make wheelchair transfers easier.
- Install grab bars at the side of the toilet that people can use to pull themselves up.
- Install a bigger toilet seat.
- Explore bigger toilets. They are longer, higher, and easier to get on and off.
- Purchase a free standing toilet tissue holder or move the existing holder closer to the toilet.

6. Flooring

- *Floors create safety problems when:*
 - They are slippery, especially when wet.
 - They have cracks or holes.
 - Throw rugs create potential tripping hazards.
 - The floor surface is too shiny and reflects too much glare.

7. Closets

- *Seniors have trouble using bathroom closets because:*
 - The shelves are too high.
 - The closet doors stick.

Kitchens

When we first looked at the number of problem areas found in the kitchen, we were surprised that the seniors we assessed did not have more difficulties with kitchen-related activities. This was particularly puzzling when we compared the number of kitchen, bedroom, bathroom, and entry- way problem areas. Typically, stoves, ovens, knives, hot water, and reaching and bending to get things out of cabinets all combine to make kitchens fairly significant danger zones. However, when we looked more closely at the seniors we assessed and where they were living, we realized that the vast majority had life long or pre-existing intellectual disabilities, and were living in supported housing. As a result, many of these older people had limited experience with kitchen tasks. The relatively low number of kitchen related problems did not necessarily indicate that kitchens were safe and accessible. Rather, it was because a number of the people we observed did not do many of the tasks that we were assessing.

Since staff had pre-determined that they could not do these activities safely, we did not ask these seniors to perform tasks that they did not normally do.

Kitchen Problems and Solutions

When older people with intellectual disabilities did perform tasks in the kitchen, we noted the following problems in either the environment or in their ability to do things.

1. Accessibility

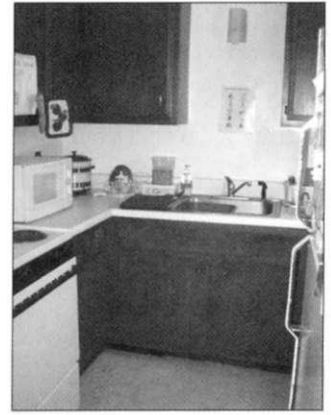
In most homes, the kitchen was generally inaccessible for wheelchair users.

- *Accessibility problems for people in wheelchairs, or who needed to sit down during kitchen work, included:*
 - Rooms that were too small for maneuvering a wheelchair.
 - Sinks and counters that were too high.
 - Sinks and counters that did not have cut outs for knees.
 - Dishwashers that were too low and could not be reached.
 - Cabinets and drawers that were inaccessible.

General Accessibility Tips

To support older people's desire to age in place productively, the kitchen should be accessible for people using wheelchairs and other devices to every extent possible. The following accessibility features will assist independence and productivity:

- A minimum 5' turning radius in the middle of the kitchen. (Note: Center islands may need to be removed.)
- An accessible sink. Ideally this should be height adjustable with the faucets mounted at the side of the sink so they can be reached more easily from a wheelchair.



Small kitchens are hard to use, especially in a wheel chair.



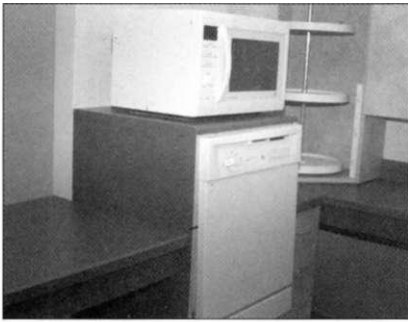
Large kitchens provide room to move in a wheel chair.



It can be hard (and dangerous) to reach top shelves in wall cabinets.



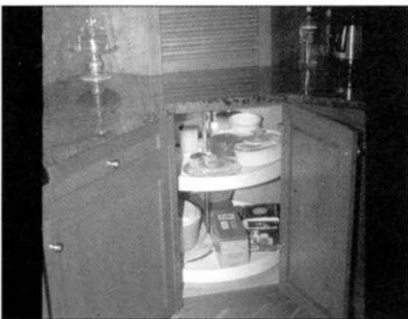
Lowering the shelves inside this cabinet made things easier to reach.



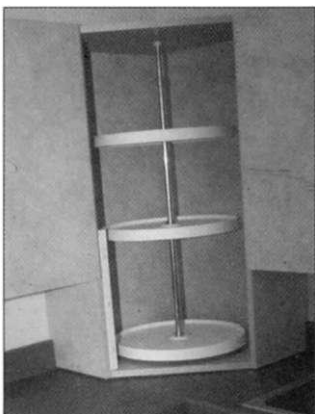
Raising the dishwasher increases wheelchair access.



Lowering wall cabinets make them more accessible.



A Lazy Susan in a base corner cabinet places everything within reach



A Lazy Susan in a wall corner cabinet also increases accessibility.

General Accessibility Tips (cont)

- An accessible work counter. (Ideally, this should also be height adjustable, but counters at different heights will work as well.)
- A raised dishwasher.
- A wheelchair height, wall mounted oven.
- A cook top with a knee cut out.

2. Storage Concerns

- Older people have problems reaching and bending. Reaching something in a wall cabinet was the most frequently observed kitchen problem, while getting an item from an under-the-counter cabinet was the second most common.
- People also had problems picking up something stored or lying on the floor, reaching items in corner cabinets, and getting pots, pans and dishes from a shelf, drawer, or cabinet.
- Some seniors had difficulty opening cabinet drawers and doors because they were stuck or the pull knobs were missing or hard to grasp.

Storage Tips

The following suggestions will increase access to storage:

- Rearrange storage so frequently used items are on lower shelves or counter tops.
- Install an extra shelf that is easy to reach.
- Build a pantry and place frequently used items at eye and hand level.
- Lower wall cabinets or lower the shelves in the cabinets.
- Replace shelving in base cabinets with pull-out drawers with glide locks.
- Install Lazy Susans in corner cabinets above, below, and on the counter.
- Construct a spice rack that is accessible from both a standing and seated position.
- Hang pots and pans from hooks on the wall so they are both visible and accessible. (Don't hang them on the wall behind the stove or cook top. People should not have to reach over hot burners, pots, and pans to get them.)
- Replace drawer and cabinet pulls with "C" or "U" shaped pulls.
- Repair all drawers and cabinet doors so they are easy to use.
- Buy "reachers" or "grabbers" for people who need them. Reachers are inexpensive and come in a variety of lengths. Buy several and keep them on hooks near the areas where they are needed throughout the house.
- Install open shelving at an accessible height.

3. The Stove: Cook Top and Oven

Stoves, cook tops and ovens can be quite dangerous for people with memory, intellectual, and physical limitations.

- *Here are some of the typical stove problems that we observed in kitchens:*
 - Burner controls located at the back of the stove were inconvenient and dangerous. They were hard to read. And the cook must reach over a hot burner or pot to operate them. This was dangerous. (It was also the third most frequent kitchen problem, after reaching things in wall and under-the-counter cabinets.)
 - Control knobs were missing, hard to turn, and/or difficult to read.
 - Burners were broken and occasionally tilted.
 - There was concern about gas, the open flame and potential explosions.
 - A cook top with a very dark surface was hard to see.
 - The broiler was too low to reach easily.
 - People with memory problems would forget to turn off the stove.
 - There was no place to rest hot items that had just been removed from the oven or a burner. (This is always a problem when there is no, or limited, counter space adjacent to the stove.)
 - Microwaves were installed over the cook top. This was inconvenient and dangerous. The oven was hard to reach, there was no place to rest a hot vessel after removing it from the microwave, and the cook had to reach over hot burners to use the appliance.

Stove and Cook Top Tips

In addition to the accessibility recommendations listed above, there are other ways to make stoves and cook tops easier and safer to use. Here are some stove and cook top suggestions:

- Replace all stoves that have controls in the back of the appliance. Select a stove that has easy-to-read and easy-to-operate controls in the front or the side of the appliance.
- Electric cook tops are generally safer than gas. Purchase a cook top that has burners that turn red as soon as they are turned on and stay red for as long as the burners are hot, even if they are turned off.
- Select a unit that has the electrical heating elements (the burners) clearly outlined on the cook top.
- Purchase a cook top that clearly indicates which knob operates which burner.
- If necessary, label burners and their control knobs. (For people with memory and judgment problems, it may be necessary to limit them to one or two burners only. The others can be disconnected.)
- Select units with burner controls that can be operated in one step. Some controls have to be pressed down and then turned. This is difficult to do for someone with arthritis or hand limitations.
- Repair all broken burners and controls.



"C" pulls on drawers and cabinets are easier to use.



Getting items from wall cabinets is easier and safer with a "grabber."



Control knobs are hard to reach and read on this style stove.



Knobs in front are easy to reach. Note how location of a knob reflects the location of the burner it controls.



This accessible cook top is reachable from a wheel chair.



The location of this microwave is both inaccessible and dangerous.



This microwave is easy to reach with an adjacent surface for resting hot cooking vessels.



Accessible, wall-mounted ovens, with counters on either side for resting hot pans and baking dishes, are ideal.

Stove and Cook Top Tips (cont)

- Place the microwave on a counter top or low "bridge" shelf. Hot vessels can then be removed and rested on an immediately adjacent surface.
- If there is no counter space next to the stove, explore the option of a rolling cart that can be placed next to the stove. Hot pots and pans can then be placed on the top of the cart after they are removed from the oven or the burners and rolled to the counter or table.
- If the broiler is too difficult to reach, consider buying a toaster oven/broiler that can be placed on the counter or a shelf.
- If there is room on the counter, install heat resistant surfaces on both sides of the stove where hot cooking vessels can be placed.
- Purchase timers for stoves and cook tops.
- Buy pots and pans with glass lids and sides so people see that something is cooking (or overcooking) on the stove (but be sure to use pot holders, glass gets hot too!).
- Buy an electric water pot for tea and coffee that has a temperature control unit below the scalding point.

4. The Kitchen Sink

Bathroom and kitchen sinks shared many of the same problems.

- *Typical sink concerns include:*
 - Fluctuations in water temperature. Scalding is a concern.
 - Difficult to operate faucets. It is hard to mix the water temperature or to distinguish the hot and cold settings on a single lever faucet. Sometimes, faucet handles are turned the wrong way.
 - A sink that is too deep. This makes it hard, or impossible, to sit in a wheelchair under the sink since there is no knee room.
 - Inadequate counter space adjacent to the sink. There is no place to put pots, pans, and dishes.
 - Lack of support for people who have difficulty standing for any length of time.

Sink Tips

Many of the recommendations for the bathroom sink also apply to the kitchen sink. However, there are also some considerations that are unique to the kitchen.

Here are some sink recommendations:

- If there are people in the home who are currently in wheelchairs, or who are candidates for them, install a sink on a 34" high section of countertop with no cabinets underneath. Select a sink with a shallow depth (6") so there is enough knee room for someone in a wheelchair.
- Install faucets to the side of the sink, or purchase a sink with a diagonal corner and place the faucets there, so they are easier to reach from a wheelchair.
- Purchase faucets that are easy to use (levers) and easy to understand (hot and cold clearly marked by color and letters).

- Install anti-scald devices.
- Purchase a "sit and stand" stool so people who are more frail can work at the sink.
- Install a long water hose that reaches to the cook top. People can then fill pots on the cook top and not have to carry them to the stove.
- A double sink lets two people work at the sink at the same time or allows one person to work on two tasks simultaneously.
- Counter space on both sides of the sink makes it easier to prepare food and do the dishes.

5. Refrigerators

Access is the major problem with refrigerators.

- *Here are some refrigerator issues to be on the alert for:*
 - Items in the back of the refrigerator are difficult to reach.
 - Items on the top or bottom shelf are inaccessible.
 - It is hard to get food from the freezer when it is over the refrigerator.
 - There is no area to place food when it is removed from the refrigerator.

Refrigerator Hps

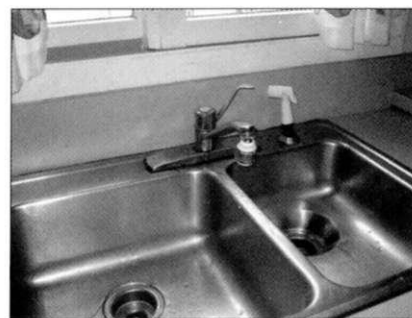
Our previous work with individuals with physical disabilities found that there is no "one size fits all" refrigerator. Refrigerator considerations include:

- Depending on their limitations, some people prefer a side-by-side unit. Others want a unit with the refrigerator on top and the freezer on the bottom.
- Roll out shelves and drawers were uniformly desired in both styles because they increase accessibility.
- Counter space next to the refrigerator is desirable because it provides a resting place for an item just taken from the refrigerator. This is helpful for someone who is frail or has hand/arm problems.
- A rolling cabinet is also helpful for transporting items from the refrigerator to the counter or table—or for providing a resting place if there is no adjacent counter space.
- If purchasing a new refrigerator, consider the abilities of the people in the household. Think about an under-the-counter unit with drawers or a full height refrigerator with swing out shelves and a lot of storage space in the door. This makes it easier to see and reach things.

6. Lighting

Many of the kitchens we observed were not sufficiently lighted for older people.

- *For example, we saw kitchens where:*
 - The lighting was inadequate. Task lighting and stronger overhead lighting were needed.
 - The light switch was hard to find.
 - The switch was not clearly marked. People had difficulty remembering which switch operated which light.



Double sinks allow two people to work at the same time (or lets one person do two tasks simultaneously).



Corner sink provides work counters on both sides.



Sink with knee cut out is wheel chair accessible.



Under counter refrigerator with drawer units is very accessible.



Adjustable height counter tops are ideal for people with varied abilities.



Handrails along center island provide support for those who need it.



A pull out drawer unit with removable mixing bowl is helpful for anyone who needs to sit and work



A cabinet by the stove provides convenient access to storage.

Lighting Tips

Lighting recommendations for the kitchen are also quite similar to suggestions for other areas in the house. Kitchen lighting suggestions include:

- Increase overhead lighting using recessed fixtures to avoid glare.
- Install task lighting over the sink, the cook top, and work surfaces. Adjustable lighting on dimmers is recommended because light levels can be adjusted to accommodate the varied lighting needs of older people.
- Install a light switch at each entrance to the kitchen so it is never necessary to walk into an unlighted room.
- Install light switches that contrast with the background wall.
- Use rocker switches instead of toggles.
- Label switches so people can associate a specific switch with a specific light.

7. Miscellaneous Problems

J Cans and jars were difficult to open.

- People had trouble carrying dishes to the table or returning them to the sink. Several trips were necessary.
- In some shared housing settings, housemates kept their dishes and cooking implements in their bedrooms because there was not enough storage room in the kitchen. These items are harder to transport to the kitchen as people become frail or develop mobility problems.
- As in all other areas of the home, throw rugs could be tripping hazards.
- There were inaccessible or insufficient numbers of electrical outlets.
- Paper towel holders were hard to reach or did not exist.
- Clutter, clutter, clutter!

Some General Recommendations

- Purchase an electric can opener.
- Buy jar openers (they come in a variety of styles).
- Purchase a "readier" or a "grabber" to help people get things from cabinets.
- Install non-skid throw rugs if floor covering is necessary.
- Buy a serving cart to conserve the number of trips a frail person must make to set or clear the table.
- Attach a large lap board with Velcro to a person's wheelchair to help him or her carry food or dishes to the table. Make sure the lap board has a lip or edge to prevent things from falling off.
- Install Ground Fault Indicator (GFI) outlets along the counter.
- Reorganize and throw out old and unused items!

Doing the Laundry

While not all of the seniors in our assessments did their own laundry, many did. This is a normal life activity that should be encouraged. However, safety always comes first. Before seniors are encouraged to do their own laundry, the environment leading to the laundry and the laundry room itself must be as hazard free as possible. During our study, we saw a number of problems that compromised safety and/or convenience in these areas.

1. The Laundry Room Door

- *During our assessments we noticed doors that:*
 - were too heavy to open.
 - closed on the older person before they passed through the doorway.
 - had thresholds that were too high.
 - were hard to lock and unlock.

Laundry Room Door Tips

- The laundry room door should be easy to open.
- Make sure laundry room doors close slowly or can be propped open so they do not close on someone walking through the doorway.
- Eliminate thresholds at laundry room doors, or install a threshold ramp.

2. Basement Laundry Rooms

- *When the washer and dryer are in the basement, there may be additional problems to consider. These include:*

J Basement stairs that are dangerous because:

- There are no double railings.
- There is an overhead beam at the bottom of the stairs that people could hit their head on.
- The steps are too steep.

- basement ceiling that is too low. People may walk into a light fixture or bang their head on a pipe.

Basement Laundry Room Tips

- Whenever possible, move laundry rooms out of basements.
- Put in a laundry shoot.
- Install double railings on all stairs leading to a laundry room. Tighten existing railings.
- Make sure ceiling beams do not create a safety hazard for people using the stairs. Pad if necessary and paint the beam a bright color so it stands out.
- In laundry basements with low ceilings—reconfigure pipes so people do not hit



A well-lighted space with windows and task lighting makes doing the laundry more pleasant.



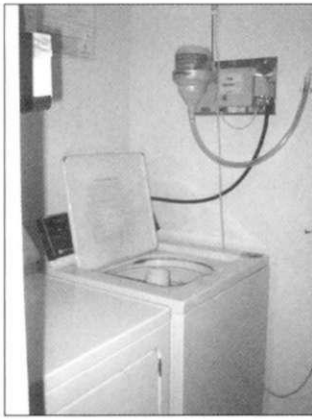
Washers and dryers in the hallway can increase accessibility but be noisy.



Double railings are important on the steps to basement laundry areas.



A shelf for supplies makes it easy to reach laundry supplies.



Automatic soap and fabric softener dispensers make it easier to do the laundry.



This is a close-up of the automatic soap and fabric softener dispenser.



Front-loading washers and dryers are easier to see inside and access by someone who uses a wheelchair.



Stackable units take up less space and are good for apartments and small houses.

their heads. If this is not possible, cover pipes with foam or padding.

- Recess lights or place globes around them if there is not sufficient height for recessed lights.

3. The Prep Area

Typical problems in the laundry room:

- There is no shelf for folding clothes.
- There is no place to store detergent and fabric softener within easy reach.
- The storage shelf—if it exists—is hard to reach.
- The lighting is poor.
- The floor drain is a tripping hazard.

Prep Area Tips

- Make sure laundry rooms are well lighted, with a light switch at the entrance to the room.
- Check floor drains to make sure they are not tripping hazards.
- Install a table by the dryer for folding clothes.
- Build an accessible shelf for laundry products next to the washer.
- Install an automatic soap/fabric softener/bleach dispenser.

4. The Appliances

The appliances can also create difficulties when:

- Their controls are difficult to read, reach, or operate.
- It is hard to reach into the washer or dryer.
- It is difficult to see into the washer or dryer to determine if all clothing has been removed.

Appliance Tips

- Purchase front loading washers and dryers. They are more accessible. Make sure the door on the appliance on the left is hinged on the left and the door on the appliance on the right is hinged on the right. This makes it easier to transfer the clothes from the washer to the dryer.
- If it is not possible to purchase a front loading dryer, or the user has trouble bending or reaching, raise or lower the appliance as needed.
- Controls should be on the front of the machines, easy to read, and operate.
- Avoid controls with too many settings. Pre-set or label the most commonly used settings to make it easier to use the machines. Block out or cover settings that are not typically used so people do not get confused or overwhelmed.
- For people who are too old or frail to get to a laundromat or to the laundry room in an apartment building, consider purchasing a small stacking washer and dryer set that fits in a closet or corner.

5. Miscellaneous

- *Frail people had particular difficulties doing their laundry because:*
 - There were steps to the room that were hard to negotiate.
 - The laundry facilities were not in the house or apartment building.
 - The clothes hamper was hard to access (under a storage box, etc.).
 - There was no convenient place to store the laundry cart or the ironing board.

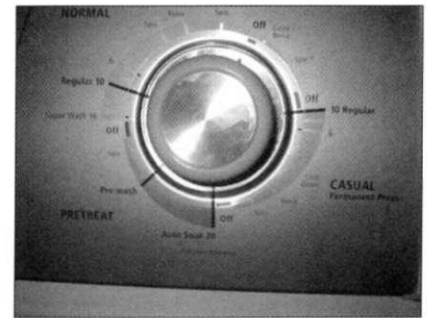
Miscellaneous Tips

- Create a convenient place to store an ironing board and iron (special hanging unit for the back of a door, a storage unit, etc.).
- Provide wheeled laundry carts, if needed.

Some General Concerns

During our assessments and interviews with older people with intellectual disabilities we also noticed some general issues in the home. While these problems are not specific to any particular room, they are worth mentioning. They include:

- *Problems with the telephone*
 - The phone was confusing or difficult to use.
 - The telephone cord was a tripping hazard.
 - People wanted cordless telephones.
 - It was hard to get to a ringing telephone in time.
- *Difficulties with electronic equipment*
 - The televisions and VCRs are hard to use.
 - remote control is complicated to use and/or is continually misplaced.
- *Miscellaneous Problems*
 - Electrical outlets are too low and hard to reach.
 - Wall-to-wall carpets have folds or wrinkles that someone could trip over.
 - Plastic runners on carpets are potential tripping hazards, especially if they have creases, are torn, or fold up at the edges.



Small letters and multiple settings can make it hard and confusing for people with visual and intellectual disabilities to use the appliances.

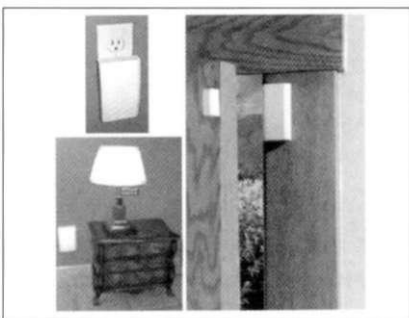


Remote controls should be uncomplicated, well labeled, and easy to use.

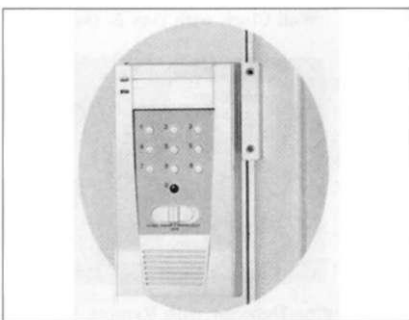




A level walkway around the house can provide a safe, outdoor wandering path (as long as it is fenced in).



Doors may have to be alarmed to alert caregivers that a person with dementia is wandering. (Above and below)



A large button, picture phone can help older people to make a telephone call independently.

Alzheimer's Disease and Other Dementias

As we mentioned in the Introduction, adults with developmental disabilities are living longer than ever before. This places them at risk for the normal range of health problems that affect older people in general. Unfortunately, these problems include Alzheimer's disease or dementia. (Dementia is a generic word that means the loss of intellectual functioning. Because Alzheimer's disease is a very common form of dementia, we will use the two words interchangeably.) Most adults with intellectual disabilities have the same chance of developing Alzheimer's as adults in the general population. However, people with Down syndrome have a much higher probability of getting dementia. About 25% of people with Down syndrome who are over the age of 40 develop dementia. Nearly two-thirds (65%) of people with Down syndrome who are over the age of 60 develop dementia. Since Alzheimer's disease is now a very real concern, we want to spend a little time discussing strategies for creating an appropriate environment for people with intellectual disabilities who have developed this condition.

Caring for someone with dementia is a challenging task for even the hardest of caregivers. When dementia, with its loss of memory and other intellectual abilities, is overlaid onto a pre-existing disability, this care challenge increases considerably. People with intellectual disabilities who develop dementia, or Alzheimer's disease, experience further declines in judgment, coping abilities, and communication skills. They may also be unable to understand what is happening to them or to describe their concerns. This makes it harder to help them.

In addition, many people with intellectual disabilities share small community group homes and apartments with other people with disabilities. While many of the home modifications recommended for dementia are beneficial to everyone, some may present a problem for house or apartment mates. Installing special locks, gates and alarms to control wandering and access to danger zones may be against state regulations for licensed community residences, such as group homes and supported apartments. They may also irritate and inconvenience other people living in the home who do not have dementia. (They may also irritate those with dementia!) In addition, other residents may become scared or annoyed by the behaviors of the person with Alzheimer's disease. All of these unique conditions increase the stress of caring for people with this dual condition.

Home Modifications For Dementia

Confused people need a calm, comfortable and safe environment that offers appropriate things to do. The home must also help the family or service providers to care for a person with dementia and a pre-existing intellectual disability.

To help meet the demands and challenges of caregiving, we recommend three goals for the home. First the home should be calming and reassuring. Second, it should be safe and supportive. Third, the home environment should provide activities that engage the person with dementia. These

"activities" should support remaining strengths and encourage as much safe and independent behavior as possible.

One of the dilemmas in dealing with the home and dementia is that each case of dementia is different and each home is unique. While some aspects of the disease are very common, there is no set of symptoms and behaviors that everyone always exhibits. Individual problems also change over time. What is a major behavior issue today may not be a problem at all next year or even next month. Likewise, environmental issues will be partially dependent on the type of home where the person with dementia lives and who else is living in the home. Is it an apartment, a two family or single family house? Is the house on one level or several levels with stairs? Is it owned or rented? Does it have open spaces where a person with dementia can be easily monitored? Does the person share the home with family members or with other people with intellectual disabilities? All of these factors impact on the type of adaptations that can be made to make the home support dementia care.

Adapting the Home: A Three-Stage Process

Since Alzheimer's is a disease that grows progressively worse, a successful home modification strategy is an ongoing process that responds to the different stages of the illness. And while safety is always a constant and paramount consideration, caregivers should not create overly restrictive environments before they are necessary. Our prior research suggests that a supportive caregiving home is one that is modified along a three-stage continuum.

Early Stage:

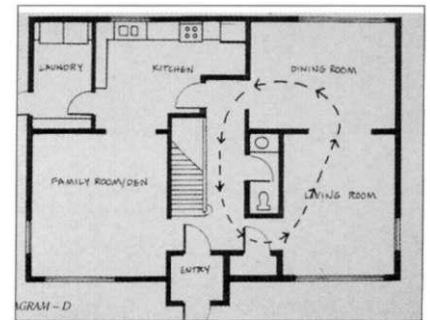
In the early stage, confusion and memory loss are moderate and the person is often physically healthy and mobile. At this point, the home environment should be modified to help the person with dementia to move and function safely so that he or she can remain as independent as possible. Many of the modifications that will help a person with dementia in the early stages are the same as those recommended in this manual to assist any aging person with intellectual disabilities. Sturdy handrails and grab bars are some examples. Because of the moderate confusion that people at this stage of the disease typically experience, other modifications to increase safety may also be needed.

• *Typical recommendations include:*

- Lock up items, such as detergents and other cleaning agents, that are harmful if ingested.
- Keep healthy food readily available so the person will not be tempted to eat food that could be harmful, such as pickle juice, frozen food or food that should not be eaten raw. Make sure these foodstuffs are stored safely out of the person's reach.
- Keep the environment simple. People with Alzheimer's disease or a related dementia have trouble understanding their environments. Eliminate clutter, control loud noise and remove furniture that they could trip over.



A screen porch with no (or lockable) doors brings people outside but prevents them from wandering off.



Safe wandering paths can be created inside the home.



Placing things at eye and reaching levels can make it easier to find safe and frequently used food items.



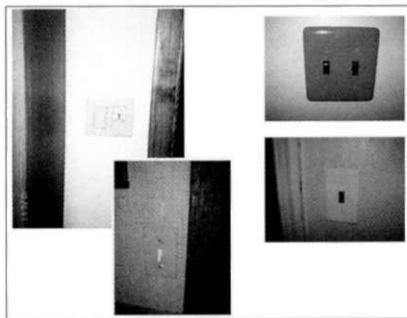
A threshold ramp removes a tripping hazard and makes the door more accessible for people in wheelchairs.



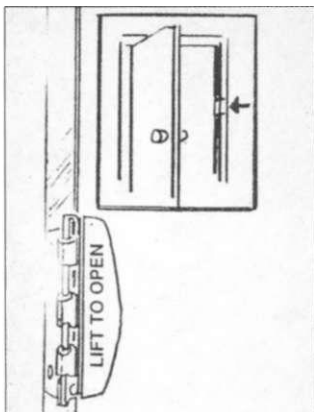
Doors and halls that all look the same can make it harder for people to find their room.



A bright and contrasting color on the seat can help confused people to find the toilet.



Switch plates that contrast with the background wall are also easier to find for someone who is confused or has low vision.



A three-step lock is another device to help keep people away from dangerous areas in the house.

- People with dementia may become disoriented and way finding may be a problem. Use visual cues (arrows, lights, and/or pictures or photos have all been used successfully) to help confused people find their way. Finding the bathroom, the toilet, and the bedrooms is particularly important. (It may be helpful to put a picture or a personal item or decoration on the bedroom doors to help people with dementia to find their rooms.)
- If possible, move the person to a first floor bedroom (assuming there is a bathroom on this level) when stairs become difficult.
- Eliminate glare that the person with dementia may find painful and confusing.
- Provide adequate light throughout the home. Difficult behaviors may be stimulated by fear and the inability to see the environment clearly. Dark rooms and shadows can be quite disturbing to some people.
- Remove or cover mirrors if hallucinations are a problem and the person thinks his/her reflection is someone else.
- Use color to emphasize what is important and deemphasize what is not. Use bright colors and high contrast to make objects visible. For example:
 - Put a white plate on a dark placemat, rather than on a light-colored or pastel placemat.
 - Entice a person to eat with colorful, aromatic food.
 - As we mentioned earlier, switch plates should contrast with walls.
 - Install a colored toilet seat so it stands out in a white or light colored bathroom.
 - Place strips of colored tape on the edge of stair treads to help people see where there is a change in level.
 - Furniture coverings should contrast with walls and floors.
 - However, a bathmat should be the same color as the tub, so the impaired person doesn't read it as a hole or a raised object.
 - Avoid boldly patterned rugs or floor coverings that could trigger an illusion or a hallucination.

Middle Stage:

As the dementia or Alzheimer's progresses, confusion increases and judgment will continue to deteriorate. At this point, the environment may need to be modified to restrict the person's access to areas in the home that are potentially dangerous. The goal at this stage is to develop a safe environment that still offers some opportunities for movement and independence.

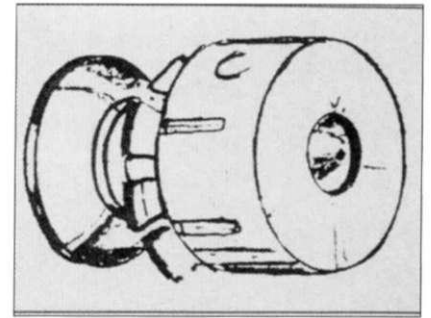
- *To ensure that the person with dementia remains safe you may need to:*
 - Restrict outdoor access by using special locks on doors and windows that cannot be easily unlocked. This, however, may seem punitive and

cause the person with dementia to become agitated or irritable. Doors that cannot be easily unlocked also create serious fire safety concerns and may be a code violation in group homes. Keeping this in mind, some less obvious ways to restrict door access include:

- Disguising the door by hanging a mural over it, putting a planter in front of it, or putting a cloth strip over the portion of a solid door that includes the door knob.
- Putting knob covers on door knobs, which make them trickier to turn.
- Installing locks either high up or low down on doors.
- Putting a dowel in the bottom track of a sliding glass door.
- Alarming the door. Since a persistent loud noise will undoubtedly be irritating to everyone who hears it, we recommend purchasing alarms that play music or chimes or have some other more soothing sound.
- Restrict indoor access, to the kitchen, for example, by installing partial doors such as saloon type doors, or Dutch doors. This way the person with dementia cannot get to the stove, the hot water, or the knives but can still see what is going on in the kitchen. With this arrangement, the person can still have contact with family or staff who are in the kitchen, and may feel less isolated or shut out.
- Install locks on cabinets, drawers, and other areas where dangerous utensils (knives, etc.) and chemicals (dishwasher detergent, cleanser, etc.) are stored.
- Install a special circuit breaker or gas shut off valve for the oven and cooktop so only the caregiver can turn on the appliance (or install tamper proof knobs over the controls).
- Put anti-scald devices and timers on water faucets.

Whenever possible, try to create spaces or safety zones within the home that the person can still use. This will help compensate for the restricted access to the other areas.

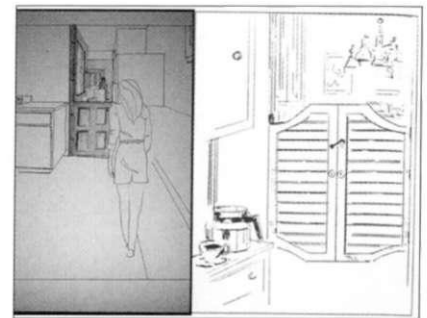
- *There are several ways to do this if you have the space and the money:*
 - Winterize a porch so the person has an additional safe place to go to all year long.
 - Build a deck. Have a railing that is too high to climb over but which has enough structure below it to prevent someone from climbing under it. Install a gate with a complicated latching device or disguise it by making it look like the railing.
 - Create an indoor and/or outdoor wandering path, with items of interest displayed along the route. Photos and pictures might be displayed indoors. Outdoors, non-toxic plants and flowers, a bird feeder, a bench, or a rock garden are all things that will make the wandering path more than just a lap track.



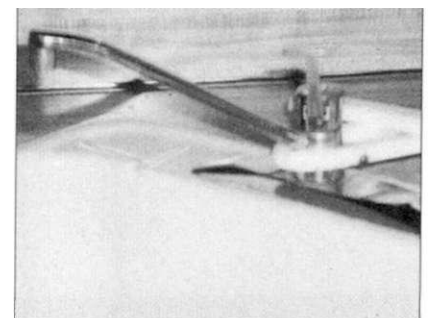
Knob covers make it harder for older people to turn door handles. This can help keep them out of dangerous places.



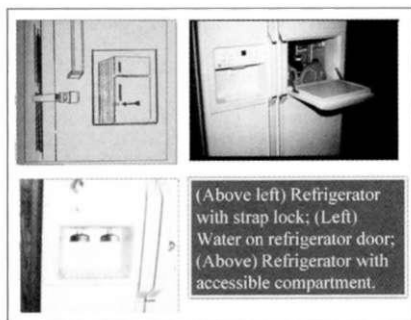
A mural disguising a door can help control wandering.



Half doors and swinging doors can help keep people out of potentially dangerous places.



By limiting the arc of the faucet to the area over the sink, this governor can prevent flooded countertops.



Locks, special compartments, and in-door water dispensers can limit and enhance access to food in the refrigerator.



Creating special work areas away from the stove and sink (above and below) can provide places where confused people can safely participate in food preparation.



Side-open tubs can make it easier for bathing frail and confused people.

- Fence in the yard, or a portion of the yard, so the person can go outside whenever he or she wants to (and weather permits). Make sure the fence is high enough that the person with dementia cannot climb over it. Also make sure the gate cannot be easily opened. (Tip: install a latching device that requires several steps or place an additional latch down low where it is below sight level.)
- Add a safe work area in the kitchen, so that the person can do simple tasks, such as shredding lettuce. This way, the person remains in the caregiver's company, without being in the way or getting near the stove.

These "safe areas" can help compensate for the ever shrinking world that results when outdoors, basements, second floors, kitchens and other danger zones become off-limits.

Late Stage

In the later stages of dementia, physical problems may interact with serious intellectual deterioration. At this point, caregiving tasks and challenges also change. The person with dementia may develop apraxia - a condition in which the brain can't get the body to do what it wants. This makes people awkward and unsteady on their feet. They may bump into things, shuffle when they walk, and/or fall frequently.

When mobility decreases, wandering and independent access to the bathroom, kitchen and other potential danger zones cease to be concerns. Bathing and grooming the person and helping them to walk into and around the house become the major issues. At this stage, home modification strategies usually concentrate on increasing accessibility and assistance with personal care.

- *These modifications typically include:*
 - Ramps, wider doorways, and the elimination of thresholds.
 - Eliminating extra furniture and clutter to create accessible pathways and spaces throughout the home.
 - Assistive products for making bathing, toileting, and grooming easier. These adaptations might include roll-in showers, bath lifts, commodes (if the person is still continent), and accessible sinks.
 - Special furniture such as accessible tables, chairs that are easy to transfer to and hospital beds.

Remember, though, that there are still ways to make the environment interesting to people in the final stages of dementia. They may particularly appreciate things that appeal to their senses. For touch you might give them soft fabric of different textures - fake fur, velvet, or wide-wale corduroy. Something they can hold close to themselves and cuddle may provide reassurance and help them feel safe. Appeal to the person's sense of smell with aromatic foods that they enjoy - perhaps fresh coffee, home-baked cookies, ripe fruits, or herbs such as basil, oregano or thyme. Many people with dementia are able to enjoy music during all the stages of the disease. Try to find favorite songs that will appeal to the person's long-term memory.

Remember, too, that with decreased mobility, access to daylight is often greatly reduced. Exposing the impaired person to daylight for at least ten minutes a day may help to reduce agitation, increase appetite and encourage better sleep patterns.

A Final Note

People with dementia may not experience all of the stages we describe. Or the stages may blend or overlap with each other as the disease continues. The family or the caregiver will be the best judge of what types of modifications are needed over the course of the disease. The most important thing is to maintain flexibility in the face of the challenges that dementia presents. Remember that Alzheimer's and dementia do not have to preclude a good quality of life.

Notes



On-grade entries and flat, level walkways are good for all older people



Concluding Comments

The authors believe that, with the proper amount of physical and social support, older people can remain at home and age in place. With this belief in mind, we wrote *A Home for Life*. We had two main goals for this work. First, we wanted to identify the wide range of real life problems that older people with intellectual disabilities face in their homes and that can undermine their safety and independence. Second, we wanted to recommend a series of practical solutions to these problems that would provide the physical support necessary to age in place.

To identify the home problems, we assessed 125 older people with intellectual disabilities and the 80-plus places where they lived. These assessments clearly showed that older people are quite varied in their abilities. They also revealed that threats to safety and independence exist everywhere--both inside and outside of the home. When we looked at the assessments more carefully, we also found that older people had more difficulty with certain activities or tasks than others and that specific areas of the home created more problems for them than others.

When it comes to the environment, the entire home needs to be as safe and supportive as possible. The unfortunate reality is that most families and service agencies have limited financial resources. Spending priorities must be set carefully. Given this reality, we feel that it will be helpful to highlight the places in the home and the tasks and activities that are most problematic, based on what we learned in our research. We hope that this information will help families and care providers to create supportive homes in a practical and cost effective manner.

Following are the tasks that people most frequently had difficulty doing (listed in decreasing order of frequency):

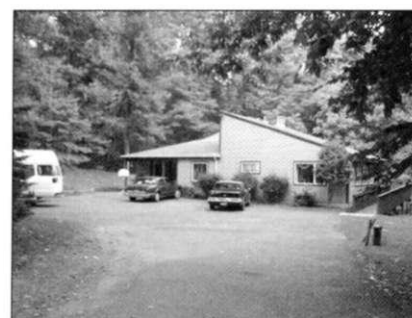
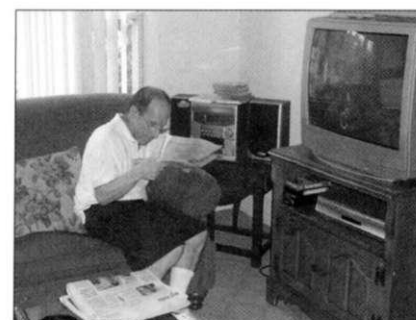
1. Taking something down from a closet shelf.
2. Turning on a light from the bed (Nearly half of the people in the study did not have a beside lamp.)
3. Going in a front, side or back door.
4. Stepping into the tub or shower.
5. Climbing or descending a stairway inside the home.
6. Bringing laundry to the laundry area.
7. Taking clothes down from a bedroom closet pole.
8. Opening or closing a window.
9. Getting dishes from the cabinet and setting the table.



Following are the most common problem areas in the home (also in decreasing order of frequency):

1. The railings on entry steps were missing or inadequate.
2. There were no grab bars in the tub or shower.
3. Bedside lights were missing or unreachable.
4. The clothes pole and shelf in the bedroom closet were too high.
5. Steps and/or landings were hazardous.
6. Front or side exterior doors were a problem--hard to open, etc.
7. Shelves in upper and lower kitchen cabinets were hard to reach.
8. There were no grab bars or other supports at the toilet.
9. There were other lighting problems in the bedroom.
10. Bedroom closets were cluttered; more storage was needed.
11. Stair railings inside the home were inadequate (wobbly, only one, etc.).

Everyone needs a safe and convenient way to get in and out of their homes, to walk to their bedrooms, and to use the bathroom. All of the suggestions in the manual will not apply to every older person with intellectual disabilities. However, as people age and become more frail, many of the issues will be increasingly more important. As a result, we are closing *A Home for Life* with an environmental checklist that covers the major points made in this resource guide. We hope that you will use this checklist to assess and then modify the home of an older person with an intellectual disability so that he or she can age in place safely, independently, and with dignity.



Home Environment Safety Checklist

EXTERIOR

Lighting

Is there adequate exterior lighting (could be on motion detectors), especially in the following areas:

- parking area?
- walkways and steps?
- near the trash area?
- near mailbox, particularly if mailbox is kept locked?
- at all doors?
- in any areas of the yard that are used after dark?

Yes

No

Outdoor Equipment

Is the mailbox at a height that people can easily reach and see inside?

Is shrubbery trimmed away from the mailbox?

If the mailbox has a lock, does it work properly?

Are any outdoor security cameras working properly?

Are walkways clear of outdoor equipment, such as grills, tables and/or chairs?

Is equipment neatly kept and well organized?

Is there a hose-holder for the hose?

Are the garbage and recycling areas accessible and neatly arranged?

Yes

No

Walkways

Are the walkways adequate? If people use the driveway, or other areas where their may be vehicular traffic as a walkway, is there enough room for them to walk safely to the side?

Are walkways smooth and level, without cracks, gaps, or other inconsistencies that could cause tripping?

Are sidewalks at an even height with their surrounding surfaces? (Even a 1" drop can be dangerous to people using mobility aids such as walkers or canes.)

Are steps along walkways clearly visible? Do they have handrails?

If wheelchair users are in residence, do the walks have aprons at intersections to make turning easier (and less than a sharp 90 degree angle)? (Aprons are a triangular section of pavement added at angles in walkways to decrease the sharpness of the turn angle.)

Are transitions between different surfaces, such as a deck, sidewalk and grass even and level?

Could the yard be re-graded to reduce the slope of steeply inclined walkways?

If there *are* steeply inclined walkways, do they have sturdy, easy to grasp, cylindrical handrails?

Are shrubs, bushes, and grass trimmed back or removed so that they do not infringe on the walkway?

Yes

No

Steps and Stairs	Yes	No
Do all steps (even single steps) have sturdy, easy to grasp, cylindrical rails on both sides?	_____	_____
Are the risers on stairs and multiple steps of equal height? Is their height appropriate (between 6 & 8 inches)?	_____	_____
Are the treads sturdy and in good condition?	_____	_____
Are steps level?	_____	_____
Have small single steps (that could cause tripping) been mini-ramped?	_____	_____
Ramps	Yes	No
Have ramps been built so that casement windows do not open up over them?	_____	_____
Are ramps rising at a slope of 12:1 or less (12" in length for every 1" in height)?	_____	_____
Do ramps have sturdy rails on both sides with cylindrical, easy grasped handrails?	_____	_____
Do ramps have non-skid surfaces or have non-skid strips been added?	_____	_____
Do ramp railings extend beyond the ramp to help people transition off the ramp?	_____	_____
Do ramps have smooth transitions from ramp surface to ground surface?	_____	_____
Does the edge of the ramp have a lip to avoid veering off with canes or walkers?	_____	_____
Do ramps have sufficient width (at least 36" between handrails)?	_____	_____
Do ramps have level landings at least every 30 feet?	_____	_____
Driveway	Yes	No
Is the driveway smooth and evenly paved?	_____	_____
Is the driveway wide enough to accommodate a van with side-door lifts, if necessary?	_____	_____
Is the transition between the driveway and surrounding surfaces (such as the yard), smooth and even, free of ruts and other indentations or protrusions that could cause tripping?	_____	_____
Outdoor Amenities	Yes	No
Are raised flower beds appropriate for consumers who enjoy gardening?	_____	_____
If there is a patio area, is it level and smoothly surfaced, with adequate room for the functions it serves?	_____	_____
Is there a smooth path or walkway around the house to encourage exercise and outdoor activity?	_____	_____
Outdoor Entryway	Yes	No
Is it well lighted (could be a motion-detector light)?	_____	_____
Is there a clearly visible, easily reachable doorbell?	_____	_____
Do the doorbells at various doors make sounds that are different from one another, so people know what doorbell is ringing?	_____	_____
Are doorbells loud enough to be heard by all the residents of the home?	_____	_____
If there are deaf residents, are there visual signals that the doorbell is ringing?	_____	_____
If there is a door mat, is it a non-skid one with no furled corners, so that it will not cause tripping?	_____	_____

TRANSITIONAL SPACES

Doors

	Yes	No
Are doorways wide enough to accommodate wheelchairs if necessary?	_____	_____
If not, is it possible to widen doorway or install swing-clear hinges?	_____	_____
Are locks in good working order and easy to use?	_____	_____
Are there lever door handles?	_____	_____
Are screen doors in good repair?	_____	_____
If there is more than one hinged door (i.e., a storm door and an inner door) are they hinged on the same side?	_____	_____
If residences have limited hand dexterity:		
• Are there sensor locks?	_____	_____
• Are there automatic door openers (preferably triggered by a sensor)?	_____	_____
• Is the sensor sensitive to a person in the doorway, as well as on either side of the doorway?	_____	_____
If there is a step up at the door, is there a possibility that the step could be ramped?	_____	_____
If not, is there also a grab rail to help frail persons pull themselves up?	_____	_____
Do residents have enough strength to open the doors?	_____	_____
Do doors stick – if so could the door be repaired or planed down, and/or could the hinges be oiled?	_____	_____

Garage

	Yes	No
Is the garage door high enough to accommodate a raised-height van if necessary?	_____	_____
Are there adequate overhead lights in the garage?	_____	_____

If there are stairs or a ramp to get into the house, see the stair and ramp sections of this checklist.

Porches and Decks

	Yes	No
Do porches and decks have railings or barriers to prevent someone from stepping or falling off?	_____	_____
Are they large enough to safely accommodate the activities that take place on them?	_____	_____

INTERIOR

Entryways

	Yes	No
Have throw rugs or area rugs that are potential tripping hazards been removed?	_____	_____
Do lobby or entry stairs have rails on both sides?	_____	_____
Is the entryway wide enough to accommodate a wheelchair if necessary?	_____	_____

Emergency Exits

	Yes	No
If there is a push bar on the door, is the push bar low enough to be reached by all the residents (including those in wheelchairs)?	_____	_____

Stairs	Yes	No
Do stairs have sturdy rails on both sides?	_____	_____
Do rails continue, even at landings?	_____	_____
Are steps equal in height?	_____	_____
Are the stair treads sturdy, not deteriorating or broken?	_____	_____
If stairs have a low, overhanging beam that people can bump their heads on, has it been padded?	_____	_____
Are stairs well lit, with light switches at both top and bottom?	_____	_____
Doors	Yes	No
Are door openings wide enough to accommodate a wheelchair (36")? If not can offset hinges be used?	_____	_____
Are thresholds level with floor (if wheelchairs users are in residence) or low enough not to be a tripping hazard? If not, can mini-ramps be installed?	_____	_____
Hallways	Yes	No
Are halls wide enough to accommodate a wheelchair?	_____	_____
If people need support, are handrails installed?	_____	_____
Lights and Lighting	Yes	No
Are light switches in an obvious, and easily reachable position?	_____	_____
Do switch plate colors contrast with walls, making them easier to spot? Do switch colors contrast with switch plate colors?	_____	_____
Are lamps with hard to twist switches, connected to wall switches?	_____	_____
Are rocker-type light switches installed?	_____	_____
Have round dimmers been replaced with sliding-lever dimmers?	_____	_____
Is lighting indirect, so that excess glare is eliminated?	_____	_____
Are there nightlights to guide people's path in hallways, to the bathroom, etc.?	_____	_____
Is lighting in transitional spaces, such as stairs or halls, adequate (especially on stairs)?	_____	_____
Closets	Yes	No
Have both shelves and clothes poles been lowered, if necessary, to be reachable by the user?	_____	_____
Have closet organizers been installed to maximize use of space?	_____	_____
Do closets have lights installed with a switch that is easy to find and reach?	_____	_____
Furnishings	Yes	No
Are upholstered couches and chairs high and firm? If not can a sheet of plywood be placed under the cushions to improve their support?	_____	_____
Do all area rugs have non-slip backings?	_____	_____
Is the dining room table wheelchair accessible?	_____	_____
Do dining room chairs have sturdy arms?	_____	_____
Has furniture been cleared from the path to windows, closets or pathways?	_____	_____
Has low furniture that could be tripped over been removed or relocated?	_____	_____
Have glass table tops been replaced with less breakable material that has clearly visible edges?	_____	_____
Do beds have lights or light switches that can be easily reached from the bed?	_____	_____

Are bureaus in good repair with working drawer-stops, and drawers that slide easily?

Have C-shaped pulls been installed on all drawers?

Can bureau drawers be easily reached?

Do lamps have switches that are easy to operate?

Do electronics entertainment devices have easy-to-use remotes?

Is there a picture, push-button telephone?

Are window blinds and shades working properly and easy to operate?

Bathrooms

Yes

No

Are there sturdy grab bars in the tub and/or shower?

Are there sturdy grab bars at the toilet (or toilet arms and a raised seat)?

Are there grab bars in other areas of the room to hold onto for support?

If there are area rugs or mats, do they have non-skid backings?

Is there a non-skid bathmat in the bathtub?

Do faucets have lever handles that are easily reachable and readable?

Is the sink at an appropriate height?

Are mirrors at an appropriate height?

If necessary, is the sink wheelchair accessible?

Is toilet paper reachable from the toilet?

Have anti-scald devices been installed?

Kitchens

Yes

No

Is there adequate reachable storage, such as pull-out shelves?

Are cabinets organized in such a way that the most frequently used items are within easy reach?

Are cabinet drawers in good repair?

Do drawers and cabinets have C-shaped handles?

Are the stove knobs located in front of the burners?

Have anti-scald devices been installed on the sink?

Is lighting adequate, particularly task lighting near sink, stove, etc.

Is ventilation adequate?

Is a serving cart available that consumers can use when setting the table, etc.?

If someone uses a wheelchair, are the sink, cook-top, oven and work counters accessible?

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