“Every one of us will need assistive technology at some point in our lives. The Idaho Assistive Technology Project is dedicated to increasing the availability of these devices.”

—Ron Seiler, Director, IATP
ACKNOWLEDGMENTS

This handbook was written and compiled by the Idaho Assistive Technology Project. We wish to thank the Idaho Office on Aging, the American Society on Aging, the American Association of Retired Persons, and the Center for Assistive Technology at the University of Buffalo for the research and workshop information supplied for preparation of this document.

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PURPOSE OF HANDBOOK

This handbook is designed as a guide for Idaho’s older citizens who, as they age, wish to preserve their independence, autonomy, productivity, and dignity. It is intended to provide information about assistive technology, home modifications, and the many service options available to older people in the communities across our state.

It identifies agencies, supportive services, funding options, and resources pertaining to assistive technology that will help older Idahoans maintain a high quality of life as their health care and daily living needs change. The handbook provides an introduction to the process of getting needed assistive technology and the training for using it. It also provides the information about resources to make homes and communities safer and more convenient as age-related changes occur. In short, this guide is designed to assist older persons in their efforts to include assistive technology in their daily lives.

The Idaho Assistive Technology Project is Contract #H224A20017 with the National Institute on Disability and Rehabilitation Research (NIDRR).

Note to the reader: The terms elders, seniors, and older persons are used interchangeably in this handbook. There are distinctions made among the terms: normal signs of aging, chronic illness, and disabilities.
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“Technology is defined by some as anything created since you were born. The difference now is that the nature of the technology has changed and the transformation has been more rapid than at any other time.”

–Brink
INTRODUCTION TO AGING AND ASSISTIVE TECHNOLOGY

Aging is a normal process that affects the physical well being of every person in some way. As we age, we may find it harder to climb stairs, drive cars, or remember what day of the week it is; however, most of us want to continue with activities we have always enjoyed. We plan to continue to be in control of our lives. We intend to be independent and live comfortably in our own homes for as long as possible. Assistive technology is a powerful tool for achieving these goals.

Three Nationwide Trends Related to Aging

Three national trends suggest that assistive technology devices and services and home modifications are beginning to play a significant role in helping older persons remain in their own homes longer, rather than relying on long-term care and services.

■ A growing size and percentage of the general population of the United States is over 65 years old.

■ More and better assistive technologies offer older persons the promise of greater independence. Currently there are more than 23,000 assistive devices and this number grows rapidly.

■ The generation of baby boomers approaching retirement is more comfortable using assistive technology and home modifications. They will bring many technology-related skills into their retirement years.

Idaho Trends Related To Aging

Since the mid 1980’s, Idaho has been one of the fastest-growing states in the nation. The population growth rate among older persons in Idaho has exceeded the national rate. The Idaho Commission on Aging states that between the years 2010 and 2020, about 28 percent of Idaho’s total population will be comprised of individuals over the age of 65 years. Nationwide, 25 percent of the population will be over the age of 65 during the same time period.

“The use of assistive technology and home modification is rising sharply while the long-term use of personal assistants is declining significantly.”

–Langio

Closed Circuit Monitor/TV (CCTV) for magnified print
This increase in Idaho’s older population, just as in the nation as a whole, will lead to a greater demand for assistive technology. Furthermore, Idaho is one of the most rural states in the country with seventy-seven percent of the population living in towns of less than 10,000. Finding ways to use technology to enhance the lives of our older citizens in rural and remote communities is a major challenge in our state.

◆ *Age Related Changes that Affect Our Health*

Often we are surprised by the normal changes that affect our bodies as we age. They simply creep up on us. However, it is important to recognize that these changes can cause barriers to an active, independent life for older persons. Even though we do not want to think of ourselves as disabled, a significant number of older people experience functional limitations associated with disabilities.

According to the American Association of Retired Persons (AARP), the natural aging process contributes to a variety of health problems. Although no two people age in the same way, there are some common age-related conditions we may experience in later life.

- Older persons have a higher rate of **blindness** than other age groups. Changes in vision accelerate after age 50 and increase in severity after age 65. Among those 85 years and older, one of 20 persons is legally blind.

- **Hearing loss** is the most common disability among older persons. As we age, we generally lose inner ear bone conductivity and/or nerve sensitivity. Hearing ability, especially in the higher frequencies, declines gradually. Background noises interfere with the ability to hear a normal conversation, and may result in a withdrawal from social participation.

- **Arthritis** is a common disability among older persons. This condition can cause painful degeneration of the joints, effecting both mobility and dexterity. For persons with arthritis, operating controls and switches, gripping objects, and using tools are the chief problems.

- Older persons are sometimes limited in their ability to reach, whether in a chair, wheelchair or standing. A standing person has a very different range of reach than someone sitting (limited range of motion).

- Many older persons experience occasional dizziness, but a chronic condition resulting in **disorientation, constant dizziness, or frailty** can cause familiar environments to become hostile.

“Older people affect the development of technology in two ways: by needs for new products and services and by increased demands for customization.”

—Brink
Walking from one place to another, and going up and down steps can be extremely difficult for people with limited mobility. For those with heart disorders, these activities can be particularly hazardous. Salmen, 1994

**Forgetfulness** and confused thinking can lead to improper intake of food or under or over medication. These conditions can, in turn, cause safety hazards such as forgetting to turn off a stove, erratic driving behavior, or wandering. Seiler, 1997

These age-related changes in our bodies often require us to make some changes in our daily lives, as well. Although we cannot reverse the aging process, we can find effective ways to cope with it. More and more older citizens are discovering that assistive technology devices and services and home modifications provide new ways to get around limitations.

**What is Assistive Technology?**

Assistive technology can be simple or complex. It includes Velcro, adapted clothing and toys, computers, seating systems, powered mobility, electronic communication systems, and thousands of other commercially available items. In legislative documents, assistive technology device is defined as “any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.” Assistive technology services are defined as any service that directly assists an individual with a disability to select, acquire, and use assistive technology.

These broadly stated definitions are included in several pieces of federal legislation. They are often used by state agencies to make decisions about whether or not to fund assistive technology. The following system of classification organizes technology products and services into five functional areas of a person’s life. It may serve to overcome confusion about what constitutes an assistive device. (See page 28 for legislation related to assistive technology.)
# Classification of Assistive Technology

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Mobility         | Devices and equipment which assist people with disabilities to move from place to place | • Manual wheelchair  
• Power scooters  
• Wheelchair lifts  
• Specialized wheelchairs |
| Communication    | Devices and/or accessories which assist people with disabilities to communicate with others | • Augmentative communication devices  
• Communication boards  
• Vision and hearing devices |
| Learning         | Technology which advances the cognitive development of people with disabilities | • Computer software and hardware  
• Adapted or modified toys |
| Self-Help        | Devices and equipment which assist people with disabilities to feed and care for themselves | • Adapted silverware  
• Modified toilets and bathtubs  
• Modified or adapted clothing |
| Vocational       | Adaptive equipment that assists people with disabilities to perform a job    | • Adapted office equipment  
• Voice recognition software  
• Accessible computer hardware |

## What are Home Modifications?

Home modifications make it easier for a person to overcome environmental problems including any feature of the home that is unsafe, that restricts access and limits task performance, or that results in discomfort. In the AARP handbook, THE DO-ABLE RENEWABLE HOME, John Salmen defines four categories of home modification:

- **Universal design**—life-span designs applied to a new home that work for everyone regardless of age or physical abilities (thirty-two inch wide doors, lever handles, and full length mirrors that accommodate everyone including wheelchair users),
- **Adaptability**—installation of adjustable sinks, counters, and grab bars so that they can be moved to different heights for different people,
- **Accessibility**—application of public building codes to private homes for easy accessibility both outside and inside the home,
- **Accessible route**—a continuous pathway that is free of hazards and abrupt changes in level that connects all important areas of the home.

> “Consumers adopt technology that is useful throughout the life cycle, and several of these products encourage independent living in later life.”  

—Brink
The use of assistive devices and home modifications for eliminating barriers in the homes of older persons is becoming more commonplace as health care professionals and building contractors gain expertise in these areas. Local hardware or electronics stores and home catalogs provide hundreds of useful items such as:

- Remote control switches for electric lights,
- Emergency 24-hour monitoring systems,
- Ergonomic tools and kitchen utensils,
- Travel aids such as electronic maps.

**ASSISTIVE TECHNOLOGY COMMONLY USED BY OLDER PERSONS**

This is the age of technology. Although every era has its technology, there are two major differences today. First, the nature of the technology has changed; and second, the transformation has been more rapid than at any other time. Every day, we are required to use new things in our transactions and communications—at the bank, at the supermarket, even at home. With these rapid changes there is the potential for older persons to feel left out or alienated.

Maintaining self esteem and a sense of belonging to a community is a challenge we all face as new technology invades our daily lives. We must view technology not as a luxury, or something beyond our capability, but rather as an essential tool to improve our quality of life. New research in the fields of aging and assistive technology is critical to the development of appropriate policy, as well as the usability and affordability of the technology itself.

---

*Adaptor lever for doorknobs*

*Walking Cane*

*The most commonly used assistive technology device is a walking cane.*

—National Center for Health Statistics
Research Findings on the Use of Assistive Technology by Older Americans

In general, the study of assistive technology and aging is in its infancy. However, because assistive technology holds unlimited promise for a rising number of older persons, it is important to know how well it works for meeting their needs. Recently, in response to this need, there has been increased research on the use and effectiveness of assistive technology for older Americans.

Very little is known about the use of assistive technology by older persons in Idaho; however, one recent study describes three results.

- Older Idahoans used similar types of assistive devices as do older persons in other states; however, they used significantly fewer devices.
- Older persons in Idaho experienced significantly more problems than older persons in other states in all areas of the home except the kitchen.
- The most common environmental problems experienced by older persons in Idaho, as well as nationwide, were: in the kitchen; in the bathroom; and getting from the street to their homes. Seiler, 1997

(See page 28 for a more extensive description of three studies concerning this topic.)

Commonly Used Assistive Technology Devices

Assistive technology in the homes of older persons is a concept whose time has come. In 1990, the typical home had roughly seventy-five controller chips which managed a complex series of operations by turning a knob or pushing a button. The estimate for the year 2000 is 225 such chips. Brink, 1997

Consider the number of chips that program appliances in your own home: in the washer, dryer, dishwasher, coffee maker, microwave, digital clocks, garage door opener, automatic car lock, just to name a few.

People over 50 now comprise one of the fastest growing segments of computer users. If you do not have a computer at home, your local library may be the place to go to use the Internet. At many Idaho county and city libraries there are one or two “Internet work stations” for public use. You can use them to look up people and addresses, find information about a city, research a medical ques-
The challenge for all of us is to keep up with the technology revolution around us.”

–Kelly

Assistive technology devices commonly fall into six major categories. Examples of assistive technology that can make daily living tasks easier for older persons are described in the following tables.

### SENSORY ENHANCERS

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL ASSISTIVE DEVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low vision, blindness</td>
<td>Text magnifiers, TV/computer screen magnifiers, books on tape, large number telephones,</td>
</tr>
<tr>
<td></td>
<td>large print books, large print playing cards, bright-colored objects and utensils</td>
</tr>
<tr>
<td>Hard of hearing, deafness</td>
<td>Hearing aids, text telephones (TT), scanners, amplifiers, alerting systems</td>
</tr>
<tr>
<td>Loss of speech</td>
<td>Communication boards, communication folders, electronic augmentative communication devices</td>
</tr>
<tr>
<td></td>
<td>that simulate speech, scanners with speech synthesizers and voice analyzers</td>
</tr>
</tbody>
</table>

Augmentative communication device with jellybean switch
### Alternative Keyboards

<table>
<thead>
<tr>
<th>Problem</th>
<th>Potential Assistive Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Limited range of motion, limited use of hands, fingers or arms, limited strength</td>
<td>Communication and work related devices; alternatives to the standard computer keyboard used for typing in data; fist or foot keyboards, switches, mouth controls, joysticks, light pens, touch screens, and breath activated switches</td>
</tr>
</tbody>
</table>

### Environmental Control Units

<table>
<thead>
<tr>
<th>Problem</th>
<th>Potential Assistive Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Limited strength, limited range of motion, limited range of reach, limited mobility, low vision, blindness, hard of hearing</td>
<td>Adaptations of timers, telephones, light switches; switches which can be activated by pressure, eyebrows or breath; text telephones (TTs), control mechanisms with sonar sensing devices, adaptations of existing tools, personal pagers, alarm systems</td>
</tr>
</tbody>
</table>

- **Telephone with large buttons and numbers**

### Daily Organizational Uses, Instructional Uses

<table>
<thead>
<tr>
<th>Problem</th>
<th>Potential Assistive Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Forgetfulness, confused thinking, memory loss</td>
<td>Pill dispensers, electronic calendars, timers; specifically designed computer software such as computer-assisted instructional programs, information management and record-keeping programs</td>
</tr>
</tbody>
</table>

- **Daily pill organizer**
### MOTIVATIONAL AND SELF-HELP DEVICES

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL ASSISTIVE DEVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Limited strength in arms, hands, fingers, upper body, limited mobility</td>
<td>Ergonomic cooking and eating utensils, ergonomic gardening tools, adapted clothing, dressing aids, remote controls, adapted games</td>
</tr>
<tr>
<td>■ Low vision</td>
<td>Large print playing cards, card holders, books on tape, screen magnifier for TV or computer</td>
</tr>
<tr>
<td>■ Hard of hearing</td>
<td>Head phones for personal control of sound on TV or stereo, or at church or concerts</td>
</tr>
</tbody>
</table>

### MOBILITY DEVICES

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL ASSISTIVE DEVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Difficulty walking, loss of leg and lower body strength</td>
<td>Canes, walkers, wheelchairs, lifts, modified vans, and power scooters, which make it easier for people to move about independently in their homes and communities</td>
</tr>
</tbody>
</table>

Lighted magnifier

Walker
Commonly Used Home Modifications

Often, in our homes, we become accustomed to environmental problems that develop over time. We may not even be aware of simple solutions that are inexpensive and easy to implement. It is important for older persons to learn about the possibilities for improving our home environments. The following table is designed to serve as a guide to assistive technology and home modifications (environmental interventions) that make homes safer and more convenient.

Potential Home Modification

<table>
<thead>
<tr>
<th>KITCHEN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PROBLEM</strong></td>
</tr>
<tr>
<td>■ Open flames and burners</td>
</tr>
<tr>
<td>■ Access to items</td>
</tr>
<tr>
<td>■ Hard to turn on faucet/stove</td>
</tr>
<tr>
<td>■ Carrying items</td>
</tr>
<tr>
<td>■ Difficulty seeing</td>
</tr>
</tbody>
</table>

Under-counter jar opener
### LIVING ROOM

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Soft low chair</td>
<td>Board under cushion, pillow or folded blanket to raise seat, blocks or platform under legs; automatic seat lift/chair; good arm rests to push on, firm back and seat cushions</td>
</tr>
<tr>
<td>■ Swivel and rocking chairs</td>
<td>Device to block motion</td>
</tr>
<tr>
<td>■ Obstructing furniture</td>
<td>Relocate or remove to clear paths (especially glass top tables)</td>
</tr>
<tr>
<td>■ Extension cords</td>
<td>Run along walls, under sturdy furniture; eliminate unnecessary ones; use power strips with breakers if possible</td>
</tr>
<tr>
<td>■ Accessing and seeing light switches</td>
<td>Touch sensitive switches, voice activated light switches (X-10, Radio Shack), illuminated wall switches; install light switch plates and sockets that contrast with wall paper or paint color</td>
</tr>
</tbody>
</table>

### BEDROOM

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Rolling bed</td>
<td>Remove wheels; block against wall</td>
</tr>
<tr>
<td>■ Bed too low</td>
<td>Leg extensions, blocks, second mattress, adjustable height hospital bed</td>
</tr>
<tr>
<td>■ Getting in/out of bed</td>
<td>Portable bed rail</td>
</tr>
<tr>
<td>■ Lighting</td>
<td>Bedside light, night light, flashlight (attaches to walker or cane); remote controlled switches (X-10, Radio Shack), lamp switch extension lever, touch lamp, touch light extension control</td>
</tr>
<tr>
<td>■ Sliding rugs</td>
<td>Remove, tack down; use rubber back or two sided tape (hardware store); use rubber mat under throw rugs</td>
</tr>
<tr>
<td>■ Slippery floor</td>
<td>Non-skid wax; no wax; rubber soled footwear</td>
</tr>
<tr>
<td>■ Thick rug edge/threshold</td>
<td>Metal strip at edge; stripe to mark change; remove threshold; tack or tape down edge</td>
</tr>
<tr>
<td>■ Far from bathroom</td>
<td>Mobility aid next to bed; bedside commode; urinal</td>
</tr>
<tr>
<td>■ Night-time calls</td>
<td>Bedside phone, cordless phone, intercom, buzzer</td>
</tr>
<tr>
<td>■ Access to clothes</td>
<td>Place clothes in easy to reach drawers, shelves, or hangers</td>
</tr>
<tr>
<td>■ Can’t see clock</td>
<td>Large faced clock radio, Braille alarm clock, talking alarm clock</td>
</tr>
</tbody>
</table>
## BATHROOM

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Getting on/off toilet</td>
<td>Raised seat, side safety bars, grab bars</td>
</tr>
<tr>
<td>■ Getting in/out of tub</td>
<td>Grab bars, bath stool/chair, transfer bench, hand-held shower; rubber mat, hydraulic lift bath seat</td>
</tr>
<tr>
<td>■ Slippery or wet floors</td>
<td>Non-skid rugs or mats</td>
</tr>
<tr>
<td>■ Hot water burns</td>
<td>Turn down thermostat; install anti-scald device</td>
</tr>
<tr>
<td>■ Doorway too narrow</td>
<td>Leave wheelchair at door and use walker; install off-set door hinge</td>
</tr>
<tr>
<td>■ Dizziness standing at sink</td>
<td>Sit on stool</td>
</tr>
<tr>
<td>■ Difficulty seeing</td>
<td>Adequate lighting, clear plastic shower curtain, toilet seat cover or seat that contrasts with walls and floor; adjustable mirror magnifier</td>
</tr>
</tbody>
</table>

*Bath bench with hand-held shower and grab bar*
### STEPS/STAIRS

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot negotiate stairs</td>
<td>Stair glide, lift (Braun Corp), elevator; ramp (permanent, portable or removable); able to bump up/down stairs on buttocks in emergencies</td>
</tr>
<tr>
<td>No handrails</td>
<td>Install at least one side (check stability)</td>
</tr>
<tr>
<td>Loose rugs</td>
<td>Remove or nail down to wooden steps</td>
</tr>
<tr>
<td>Difficult to see</td>
<td>Adequate lighting; mark edge of steps with brightly colored tape (at least top and bottom ones)</td>
</tr>
<tr>
<td>Unable to use walker on stairs</td>
<td>Keep second walker or wheelchair at top or bottom of stairs</td>
</tr>
</tbody>
</table>

### TELEPHONE

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficult to reach</td>
<td>Cordless phone; inform friends to give you 10 rings; clear path; headset cordless phone; answering machine and call back; remote answer phone</td>
</tr>
<tr>
<td>Difficult to hear ringing</td>
<td>Ring amplifier, blinking or flashing lights (Radio Shack), vibration (Silent Call, Inc.)</td>
</tr>
<tr>
<td>Difficult to hear other person</td>
<td>Volume control, text telephone (TT, TTY, TTD), headset</td>
</tr>
<tr>
<td>Difficult to hold receiver</td>
<td>Headset, speaker phone, adapted handles (AT&amp;T Phone Center)</td>
</tr>
<tr>
<td>Difficulty dialing numbers</td>
<td>Preset memory-dial, large buttons and numbers, voice activated dialing; all phones the same model with same preset memory in case of crisis</td>
</tr>
</tbody>
</table>

### MEDICATIONS

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty reading label</td>
<td>Use magnifying glass; good lighting; large print</td>
</tr>
<tr>
<td>Memory loss</td>
<td>Medication organizer, automatic pill dispenser, organize pills in envelopes with time and date; houseclean all old medications; pharmacists fill pill dispensers weekly (for fee); arrange set time for relative or friend to call as a reminder</td>
</tr>
<tr>
<td>Difficult to open</td>
<td>Pill cap opener; dispensers filled by pharmacist</td>
</tr>
</tbody>
</table>
### HOME MANAGEMENT

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laundry</td>
<td>Easy to access (basement, stairs, etc.); install washer/dryer on main floor; sit on stool to access clothes in dryer; good lighting; fold laundry sitting at table; carry laundry in bag on stairs; use cart</td>
</tr>
<tr>
<td>Mail</td>
<td>Easy to access mailbox; mail basket on door; ask carrier to place in a specific location (same with paper carrier); install mail-slot; use reacher, key lever</td>
</tr>
<tr>
<td>Housekeeping</td>
<td>Long-handled sponge, dust pan; lightweight vacuum</td>
</tr>
<tr>
<td>Controlling thermostat</td>
<td>Mount in accessible location; large print numbers (available from gas company in some areas); remote controlled thermostat (X-10, Radio Shack)</td>
</tr>
</tbody>
</table>

### SAFETY

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POTENTIAL INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty locking doors</td>
<td>Remote controlled door lock; door wedge</td>
</tr>
<tr>
<td>Difficulty opening door and knowing who is there</td>
<td>Automatic door openers, intercom at door (Nutone); lever doorknob handles or adaptor levers (BeOK or Leveron); video intercom</td>
</tr>
<tr>
<td>Opening/closing windows/shades</td>
<td>Remote controlled windows and shades; lever and crank</td>
</tr>
<tr>
<td>Can’t hear alarms, smoke detectors, phone ringing, or doorbell</td>
<td>Blinking lights, vibrating surfaces (Silent Call, Inc.)</td>
</tr>
<tr>
<td>Access to emergency exit</td>
<td>Must have alternative means of exiting home in case of emergency; fire blanket; practice using exit route</td>
</tr>
<tr>
<td>Lighting</td>
<td>Illumination 1-2 feet from object being viewed; change bulbs if dim, not burned out; adequate lighting in stairways and hallways; night-lights</td>
</tr>
<tr>
<td>Glare</td>
<td>Light-colored sheer curtains on windows with direct sunlight; gradual decrease in illumination from foreground to background</td>
</tr>
<tr>
<td>Dizziness, falling in home</td>
<td>Wear emergency pager that keeps you in touch with a central hotline in your community. (See page 44, Lifeline.)</td>
</tr>
<tr>
<td>PROBLEM</td>
<td>POTENTIAL INTERVENTION</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Can’t hear/see television</td>
<td>Personal listening device with amplifier (several commercial brands, compatible with hearing aids); closed captioning, TV magnifier</td>
</tr>
<tr>
<td>Complicated remote control</td>
<td>Simple remote with large buttons, universal remote control, voice activated remote control, clapper (Radio Shack)</td>
</tr>
<tr>
<td>Can’t see cards, can’t shuffle or hold cards</td>
<td>Large print cards, automatic shuffler, card holder</td>
</tr>
<tr>
<td>Can’t read small print</td>
<td>Magnifying glass holder, print enlargement system, scanner with electronic voice output</td>
</tr>
<tr>
<td>Glare on reading material</td>
<td>Use focused light source; avoid glossy paper for reading material; black ink vs. blue or pencil</td>
</tr>
<tr>
<td>Can’t hold books</td>
<td>Books on tape; scanner with electronic voice output</td>
</tr>
<tr>
<td>Can’t use keyboard</td>
<td>Voice recognition screen, touch screen; alternative keyboards such as fist or foot switches</td>
</tr>
</tbody>
</table>

Ergonomic garden tools
 Assessment and evaluation for the purpose of getting assistive technology devices and services is not a neutral process. It is affected by subjective interpretation, values and emotions. For older persons, it involves making choices about assistive technology that affect their self esteem and their future. For some, those choices can mean the difference between living at home and moving to a care facility. For these reasons, it is essential to complete the assessment from the perspective of the older person. It is the primary job of the professional making the assessment to guide an older person (and family members or primary caregivers) through the steps of the assessment procedure, to get input at every stage, and to respond to questions honestly and thoughtfully.

**WISE Technology**

- **Welcoming:** desirable to the consumer, not aversive
- **Integrative:** fits and works well with other devices and the environment
- **Supportive:** compensates and augments the abilities of a person without causing limitations
- **Enabling:** helps the individual accomplish his or her goals

It may not be necessary to complete every step of the assessment process for each person. However, if an individual appears to have complex needs, following these procedures will ensure the selection of the best possible assistive devices or home modifications to meet those needs. This is important for several reasons. First, research confirms that as many as one-third of all devices purchased, most with taxpayer dollars, are abandoned within one year after acquisition. Second, it is very important that older persons are comfortable with the assistive devices provided to them. Research suggests that unless older persons are comfortable with an assistive device, they will not use it. Lastly, using these assessment procedures ensures that the most cost-effective intervention is selected for a person.

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**Guidelines for Assessment**

- Step 1 Gather information
- Step 2 Conduct direct observation
- Step 3 Develop problem statement
- Step 4 Conduct formal assessment of abilities and environment
- Step 5 Explore possible interventions
- Step 6 Try out possible interventions
- Step 7 Modify interventions (if needed)
- Step 8 Implement and train older person
- Step 9 Monitor progress

---

“The most common home adaptation is handrails, followed by ramps, extra-wide doors, and raised toilets.”

—National Center for Health Statistics
In general, the process of selecting the most appropriate and cost-effective assistive devices or home modifications (environmental interventions) for an older person includes the following steps:

**Step 1 - Gather information**

The overall assessment process begins by gathering information about the older person. Demographic information is gathered first, followed by the collection of information about the person’s physical health, communication skills, activities of daily living, level of independence, mental status (if needed), social resources, and the number and type of assistive technology and/or prostheses used.

**Step 2 - Conduct direct observation**

The second step is to conduct some limited direct observation of the person. These observations should include both interviews with the person and a brief environmental survey. This should be done in the older person’s home. It is critical to listen carefully to the person who is being assessed, and to interpret correctly.

**Step 3 - Develop problem statement**

The third step is the development of the problem statement for the older person. This statement should reflect the information gathered in the previous steps. It should describe the challenges faced by the person in all of his/her environments while focusing on the person’s strengths and abilities. If appropriate, the statement should provide specific recommendations for conducting a more comprehensive assessment of the person’s needs.

**Step 4 - Conduct formal assessment of abilities and environment**

The fourth step, if necessary, is to conduct a more in-depth assessment of the older person’s abilities and environment. This step begins by establishing the appropriate team to conduct the assessment. The assessment could include more interviews of the older person and family members, an in-depth environmental survey, and other procedures.

**Step 5 - Explore possible interventions**

After the formal component of the assessment is completed, possible assistive devices and home modifications are identified for the person. See pages 12-17 and 58 for a list of possible modifications for older persons across all areas of the home and outside areas.

---

“Information technology permits mass customization. By feeding in the individual characteristics of the consumer, a customized product can be generated. This is particularly valuable for older people who vary considerably in abilities.”

—Brink
Step 6 - Try out possible interventions

After the possible interventions are identified, it may be necessary to ask the person to use some devices for a trial period. This will confirm the usefulness of the devices and/or home modifications.

Step 7 - Modify interventions

If necessary, the device selected should be adapted or modified according to the findings during the trial period. Also, the home modifications identified in the environmental survey should be completed as part of this step.

Step 8 - Implement and train the person

Once the other steps have been completed, the device and/or home modification should be provided to the older person. It is important that the person be supported to use the device or home modification. To do this, the person, and if appropriate, family members, should receive training in how to use, repair, and maintain the device.

Step 9 - Monitor progress

Family members and service providers should monitor the person’s use of the device and/or home modification to ensure he/she is using them correctly. They should note any further modifications that may be needed over time and ensure the devices pose no risk.

Selecting the most appropriate device or home modification can be a simple or complex process. Regardless, the main focus of this process should be on the needs of the person, not the technology. For some older persons, a team approach to assessment may be the most appropriate. In other situations, no professional involvement is needed. The steps described above, whether used in part or whole, will ensure that the most appropriate device or home modification is selected. In turn, this will promote the effective use of assistive technology or home modifications while being cost effective.

There are several keys to successful assessment of technology for persons in need. The assessment process must always be consumer directed. It should be done with understanding and respect. Consideration given to a person’s personal values, preferences and choices leads to satisfaction with an assistive technology device.

“If I am the person being assessed, let me in on the process. See me, hear me, know who I am.”

Augmentative communication device (an alternative device to speech)
Funding for Assistive Technology and Home Modifications

Sources for financial assistance for the purchase of assistive technology are many and varied. Each has different eligibility criteria. Most require that an application for services or financial assistance be completed. All programs have specific rules regarding what equipment can be purchased. At the present time, the limits on funding assistive devices and/or adaptive equipment are set by Medicare, Medicaid and other insurance programs in our country, or by the individual’s ability to pay for his or her own technology.

Below is a list of possible funding agencies for assistive technology devices and home modifications that meet the needs of older persons.

(For more complete information about the funding sources, see page 39 of the Resource section of this handbook.)

At the time of your assessment, it is important to focus on how you plan to pay for the necessary assistive technology devices, services or home modifications. It is of paramount importance to document the results of the assessment in detail when working with funding agencies. If you plan to pay for the technology yourself, you will probably not be as concerned about detailed documentation.

If you request funding from Medicare, Medicaid or another insurance company, you will need to follow specific guidelines. In order to enter any funding system, it is necessary to verify that the request is in keeping with the focus of that system. Although most agencies have their own forms and procedures, there are some helpful strategies that can save you time.

Funding Sources

**Medicare:** the federal health insurance program, which provides coverage for a limited amount of medical expenses and limited types of medical services.

**Medicaid:** a joint state-federal program, which covers some equipment if it is considered medically necessary. Medicaid services are based on financial need. Currently the program covers a range of durable medical supplies and services.

**Vocational Rehabilitation Services:** a federal agency which provides information, evaluation services, training and funding for technology to help people with disabilities pursue vocational goals and live more independently.

**Private Insurance:** some insurance plans will buy equipment but it will depend on the policy. The equipment must be considered medically necessary and will require a doctor’s prescription.

**Non-Profit Disability Associations:** may be able to loan you equipment or tell you about other funding sources or support groups. A partial listing of these agencies in Idaho include:

- National Easter Seal Society
- Muscular Dystrophy Association
- United Cerebral Palsy Association

**Foundations and Clubs:** organizations such as the Elks, Moose, and the Lions may offer money to buy technology. Check for the local foundations in your area.
Guidelines for Securing Funding for Assistive Devices for Older Persons

The major objective of these guidelines is to help you prepare a formal funding request package. Typically, any funding agent will move cases along only when all of the paperwork is submitted. Forward the funding request package to the agency only after all required documentation is complete. This is the opening documentation of your case file with any funding agency.

Developing a Funding Request

Prepare a formal funding request package. Include the documentation of the assessment/evaluation, the justification, and any other paperwork the agency requires.

Although they may appear complex and time-consuming, following these ten steps carefully will help simplify the procedure for obtaining funding for needed technology.

Step 1 - Develop a documentation checklist of necessary forms and procedures

Prior to submitting the request, develop a documentation checklist of necessary forms and procedures. Start your checklist with the documents outlined below and add to it as you proceed through the steps. No matter which funding sources are approached for securing assistive technology, you must document the need, the evaluation and the justification:

- Needs assessment of the older person,
- Evaluation document of the needed technology device, service, or home modification,
- Physician’s prescription,
- Letter of medical necessity from the physician,
- Letters of medical necessity from other professionals involved in the assessment,
- General discussion/description of medical diagnosis that provides further information about needs,
- Explanation of the individual’s functional skills without the equipment and how those skills will be improved with the assistive technology,
- Discussion of the assistive technology with specifications for the individual,
- Specifications of the equipment including cost and photograph or catalog picture (gathered in Step 2).

"REMEMBER: The evaluation/diagnosis is the most important piece of documentation in the entire funding process!"

Guidelines for Funding Request

Step 1 Develop documentation checklist
Step 2 Document older person’s needs assessment
Step 3 Document evaluation of the technology device/services
Step 4 Determine the funding sources
Step 5 Determine if alternative equipment will meet the need
Step 6 Develop funding justification
Step 7 Write letter of transmittal
Step 8 Receive authorization from funding agency
Step 9 Search for co-payment options (if necessary)
Step 10 Proceed with appeals process (if necessary)
Step 2 - Document older person’s needs assessment

A professional or team of professionals, such as a physician and physical therapist, will conduct the needs assessment and identify the aspect of the consumer’s life in which technology will be of help. The assistive technology need will fall primarily into one functional area of the person’s life. See the Classification of Assistive Technology Devices, page 6. The assessment must address the older person’s needs as specifically as possible from a medical or vocational perspective; or, from the perspective of increased independence, depending on the funding source.

Step 3 - Document evaluation of technology device and services needed

To get a clear picture of the specific assistive technology device, and all related services and their costs, you must consider:

- Which type of assistive technology will improve the level of function,
- Who will evaluate the need and technology,
- What services are needed to prescribe, train and follow up with the device,
- What the costs will be.

Physical therapists, speech therapists, and occupational therapists may be the primary evaluators; however, it will still be necessary to get a prescription from a physician when dealing with medicaid or other insurance.

At the same time, gather other justification identified in Step 6. (See Guidelines for Assessment, page 18.)

Provide a well-written statement of the evaluation/diagnosis. It should be concise, direct, and well organized. Minimally, the evaluation write-up should be organized in such a way as to reflect:

- The background and history of the person,
- The current status of the person,
- Recommendations to improve the person’s condition.
Step 4 - Determine the funding sources

Consider all possible options for paying for the assistive technology device or services, and/or home modifications. What are the consumer’s personal resources? Can he/she pay for any part of the equipment or services? What about a low-cost bank loan? Is the consumer eligible for public services? Which insurance plan does he/she have? (See Funding Sources, page 39.)

Step 5 - Determine if alternative equipment will meet the need

Based on the past history of funding patterns and denials to authorize money for required assistive technology, you may need to research some alternatives. Can this piece of equipment be made? Is there another piece of equipment that can meet the need? Can it be borrowed? You can rely on a technology specialist at the Assistive Technology Resource Center in your region for most of this information. (See Idaho Organizations and Resources, page 32.)

Step 6 - Develop funding justification

A case manager, Durable Medical Equipment (DME) dealer, or you (or your advocate) will usually gather all the required documentation. Find out from the funding source exactly what is needed. The funding justification is the bridge between the recommendations in the evaluation and the issues that funding sources often raise when reviewing a request. It should accompany the evaluation completed in Step 3.

A funding justification is different from an evaluation. An evaluation determines what tool or equipment a person needs. A funding justification states how that tool would make the person’s work easier or make life better in some way. Minimally, an effective funding justification will:

■ State the need that the assistive technology will address,
■ Document the person’s proven ability to use the assistive technology,
■ Explain why this technology is the best solution to the person’s problem,
■ Include an explanation of any other approaches that were tried but were unsuccessful,
■ Include pictures or videotapes of the person using the technology, especially if graphic change occurs as a result.
The funding justification clearly builds the case for the funding request, starting from an assumption that the evaluation identified a valid need.

**Step 7 - Write letter of transmittal**

First, organize the funding request package. All pages of the evaluation and the funding justification should be clearly labeled with the consumer’s name, the document name and the date. Such labeling will help ensure that, as the request is processed, pages will not be lost.

The transmittal letter should:

- List and identify the documentation in the request package by name and/or form number,
- Indicate how many copies of each document are in the package,
- Give the name of the consumer,
- Provide a name and phone number of a contact person,
- Request that the funding agency get in touch with the contact person immediately if necessary documentation is missing or if processing the claim will be delayed for any reason.

Together, all of the documents and letters listed in the above seven steps make up the funding request package, which should be submitted to the funding agency only when your file is complete.

**Step 8 - Receive authorization from funding agency**

Authorization will include written approval for the amount of money that has been authorized by the funding agency for buying the specified technology. If the amount authorized covers the full purchase price, the vendor will be able to process the order and the equipment. If the full amount of money is not approved, move to Step 9. If funding is denied, go to Step 10.

**Step 9 - Search for co-payment options (if necessary)**

The consumer may have to pay part of the cost of the assistive technology. Can he/she secure a bank loan or a home equity loan? This is a good time to seek assistance from community and philanthropic organizations. If funding is denied, go to Step 10.
Step 10 - Proceed with appeals process (if necessary)

This process is common when it comes to securing funding for assistive technology. Try to determine why your request was denied and then find out if supplying the funding source with additional information would help. Submit the new information to the person who is handling your case. At this point in the process you may want to seek legal advocacy. (See Idaho Organizations and Resources, pages 32 and 38.)

As you can envision, working with funding sources requires patience and perseverance as well as attention to detail. Communicate in writing whenever possible and direct calls and letters to the same person each time. Maintain frequent communication with the funding source to keep the process on track. Keeping careful records and documentation of all communication can speed up the funding process for you.
Summary

Assistive technology, with its wide array of devices, is redefining what is possible for today’s older persons. These devices can help people perform tasks around home, enjoy recreation and leisure activities, communicate with family and friends, regulate medications, and ensure safety and security. Research suggests that using assistive technology is playing an increasingly significant role in helping older people to remain living in their homes and communities longer, thus reducing reliance on expensive long term care services.

Idaho’s older citizens deserve full access to assistive technology in order to realize their potential to remain independent and productive. More importantly, using assistive technology can help them realize their dreams of living long comfortable lives in their own homes.
Legislation Affecting Assistive Technology

Recent public policies emphasize the importance of increased access to assistive technology. They include:

- The Americans with Disabilities Act of 1989,
- The Technology-Related Assistance for Individuals with Disabilities Act of 1994 as amended in Public Law 103-218,
- The Rehabilitation Act Amendments of 1991,
- The Individuals with Disabilities Education Act of 1975.

These laws have contributed to advancements in and increased availability of assistive technologies.

Research Findings on the Use of Assistive Technology by Older Americans

This section briefly describes the results of three studies concerning the use and effectiveness of assistive technology for older Americans.

According to one study conducted by the National Center on Health Statistics (LaPlante, et al.1994), the use of assistive technology devices grew rapidly in the decade of the 1980’s. This growth is a result of two factors: the growing number and availability of devices; and, the increased age of the general population. In 1990, thirteen million Americans, about 5.3 percent of the population, were using assistive technology devices to accommodate physical impairments. More people use assistive devices to compensate for mobility impairments than any other general type of impairment. The walking cane is the single most used assistive technology device. Others, in order of prevalence, include hearing aids, walkers, wheelchairs, and back braces. Nearly 3 percent of all Americans, lived in homes that were specially adapted to accommodate impairments.
In 1993, the Rehabilitation Engineering Research Center on Aging at the University of Buffalo completed a study entitled “Comparison of Assistive Device Use and Needs of Home-Based older Persons with Different Impairments.” This study examined assistive devices used by noninstitutionalized older persons with visual, cognitive, and physical impairments. The sample population included 157 subjects living in New York who were assigned to one of seven groups. The participants in this study were interviewed face-to-face to determine the current use of assistive devices. The study found that:

- Participants owned an average of 13.7 devices each,
- Persons with vision and physical impairments owned the most devices—20 devices per person,
- Persons with cognitive impairments owned the fewest,
- Most of the devices owned by older persons related closely to the impairment that identified the group.

Although very little is known about the use of assistive technology by older persons in our own state, one study suggests that they use similar types of assistive devices as do their counterparts in other states. However, the results also suggest that they use significantly fewer devices. On the average, older Idahoans use two devices per households compared to an average of 7.3 devices used nation wide. Older persons in Idaho expressed a need for fewer devices than did those in other states. The reasons for this are unknown, but could be attributed to a general lack of awareness about assistive devices.

Older Idahoans also experienced the same types of environmental problems as those living in other states but the number of problems they have is significantly higher. Nationwide, older persons experience four problems per household on the average, while in Idaho, older people in the study reported more than seven problems per household. Combined, these data suggest that Idaho’s older citizens appear to experience a higher rate of environmental problems, while using a lower number of assistive devices to overcome them, compared to older persons in other states.

The following graph illustrates these comparisons.
Use of Technology

Technology Training Recommendations for Older Persons

When introducing technology to older persons and teaching them to use it, there are several recommendations.

- Technology should be perceived as needed and meaningful and linked into the lifestyle of the person.
- Cautions and disbelief in one’s capability may be an obstacle in accepting technology and must be considered when creating the learning environment.
- A generous amount of time as well as repeated short training sessions should be allowed.
- More stress should be placed on the practical application of the device than on its technical features.

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When introducing technology to older persons and teaching them to use it, there are several recommendations.

- Technology should be perceived as needed and meaningful and linked into the lifestyle of the person.
- Cautions and disbelief in one’s capability may be an obstacle in accepting technology and must be considered when creating the learning environment.
- A generous amount of time as well as repeated short training sessions should be allowed.
- More stress should be placed on the practical application of the device than on its technical features.
“Investing in relatively inexpensive assistive devices can potentially increase the independence of Idaho’s older citizens.”

—Seiler

- Only selective central facts should be provided.
- Mnemonics and cues will favorably affect self efficacy in handling new products.
- Training sessions should be held in the home or natural meeting places of the person.
- The instructors must be well known by the person or introduced well in advance of the training.
- The attitudes of the instructors towards the person must be positive and realistic.

RESOURCES

 Idaho Organizations and Resources

Idaho Assistive Technology Project

The Idaho Assistive Technology Project, which began operations in September 1992, assists Idahoans with disabilities to acquire the assistive technology they need to live more independent and productive lives. The project is funded by a grant from the U.S. Department of Education, the National Institute on Disability Rehabilitation and Research. The goal of the Idaho Assistive Technology Project is to increase the availability of assistive technology, appropriate to individual needs, for Idaho’s citizens with disabilities. The Project conducts activities in three broad areas: policy; training and empowerment; and, individual advocacy and supports.

Contact: Idaho Assistive Technology Project
Center on Disabilities and Human Development

Assistive Technology Resource Centers

There are five regional Assistive Technology Resource Centers (ATRCs) located throughout the state of Idaho. The ATRCs are under contract to the Idaho Assistive Technology Project. They serve consumers and service providers with technical assistance and one-on-one consultation about assistive technology; funding sources; used equipment and equipment loan programs; and, training and technical assistance. The ATRCs are among the agencies responsible for helping older citizens find ways to get the assistive technology they need and to assist in training them to use it.

Contact: Regional Assistive Technology Resource Centers
Assistive Technology Resource Centers

REGION 1

Kootenai Medical Center
McCranecenter
2003 Lincoln Way
Coeur d’Alene, ID 83814
(208) 666-2235

REGION 3

United Cerebral Palsy
5420 W. Franklin Rd, Suite A
Boise, ID 83705
(208) 377-8070 voice
(208) 322-7133 fax
Idaho Commission for the Blind and Visually Impaired

The Idaho Commission for the Blind provides vocational and other rehabilitative services to persons with blindness.

• Idaho Commission for the Blind “Independent Living Rehabilitation Services”

Eligibility: Eligibility is determined on the basis of “legal blindness,” which can be described as 10% or less of “normal” vision.

Coverage: Counseling, information and referral, training, home instruction, and adaptive devices. Counseling and instruction are provided at no cost. Other services, such as adaptive equipment are provided based upon financial need.

• Idaho Commission for the Blind “State Only Services”

Eligibility: State Only Services are available for individuals who are not eligible for Vocational Rehabilitation or Independent Living, yet are experiencing a substantial physical or financial hardship as a result of their visual impairment.

Coverage: The most common service provided through State Only funds is that of prevention of vision loss or blindness.

Contact: Idaho Commission for the Blind and Visually Impaired

Idaho Office on Aging

This state government agency administers the federally funded programs for older Idahoans including six Area Agencies on Aging throughout Idaho.

Eligibility: Persons age 60+.

Coverage: Information and assistance, home and community-based services, i.e., nutrition programs, transportation, respite, ombudsman, legal assistance, guardianship, case management, chore services, shopping assistance, personal care, senior companion program, homemaker, adult day care, senior housing and older worker programs (age 55+).

Contact: Idaho Office on Aging
## Area Agencies on Aging

<table>
<thead>
<tr>
<th>Area</th>
<th>Agency Name</th>
<th>Address</th>
<th>Phone Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Agency on Aging</td>
<td>1221 Ironwood Dr., Suite 102</td>
<td>(208) 667-3179 or 1-800-786-5536 voice (208) 667-5938 fax</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coeur d’Alene, ID 83814</td>
<td></td>
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<tr>
<td>II</td>
<td>Agency on Aging</td>
<td>Community Action Agency, Inc.</td>
<td>(208) 743-5580 or 1-800-877-3206 voice (208) 746-5456 fax</td>
</tr>
<tr>
<td></td>
<td></td>
<td>124 New Sixth St.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Lewiston, ID 83501</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Agency on Aging</td>
<td>Ida-Ore Planning and Development Association</td>
<td>(208) 549-2411 or 1-800-859-0324 voice (208) 549-0071 fax</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PO Box 311 (25 W. Idaho)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Weiser, ID 83672-0311</td>
<td></td>
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<tr>
<td>IV</td>
<td>Agency on Aging</td>
<td>College of Southern Idaho</td>
<td>(208) 736-2122 or 1-800-574-8656 voice (208) 736-2126 fax</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PO Box 1238 (998 N. Washington St.)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Twin Falls, ID 83303-1238</td>
<td></td>
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<tr>
<td>V</td>
<td>Agency on Aging</td>
<td>Southeast Idaho Council of Governments</td>
<td>(208) 233-4032 or 1-800-526-8129 voice (208) 233-4841 fax</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PO Box 6079 (214 E. Center)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pocatello, ID 83205-6079</td>
<td></td>
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<tr>
<td>VI</td>
<td>Agency on Aging</td>
<td>Eastern Idaho Special Services Agency</td>
<td>(208) 522-5391 or 1-800-632-4813 voice (208) 522-5453 fax</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PO Box 51098 (357 Constitution Way)</td>
<td></td>
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<td></td>
<td></td>
<td>Idaho Falls, ID 83405-51098</td>
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Council for the Deaf and Hard of Hearing

This national/state program provides information and referral of services for the deaf and hard of hearing.

Eligibility: None

Coverage: Information and referral, advocacy, and quarterly newsletter.

Contact: Council for the Deaf and Hard of Hearing

The Council operates Assistive Device Demonstration and Loan Centers where any person, of any age, can learn about devices. These centers demonstrate and loan equipment for trial periods. The Council does not sell equipment but provides information and catalogs on location.

Contact: Regional centers

<table>
<thead>
<tr>
<th>Boise:</th>
<th>Council for the Deaf and Hard of Hearing</th>
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<tbody>
<tr>
<td></td>
<td>1720 Westgate Dr., Suite A</td>
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<tr>
<td></td>
<td>Boise, ID 83704</td>
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<tr>
<td></td>
<td>(208) 334-0879/800-433-1323 voice</td>
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<tr>
<td></td>
<td>(208) 334-0803 / 800-433-1361 TTY</td>
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<table>
<thead>
<tr>
<th>Idaho Falls:</th>
<th>Living Independently for Everyone (LIFE)</th>
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<tbody>
<tr>
<td></td>
<td>2110 Rollandet Avenue</td>
</tr>
<tr>
<td></td>
<td>Idaho Falls, ID 83402</td>
</tr>
<tr>
<td></td>
<td>(208) 529-8610</td>
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<table>
<thead>
<tr>
<th>Moscow:</th>
<th>Disability Action Center (DAC) Northwest</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>124 East Third Street</td>
</tr>
<tr>
<td></td>
<td>Moscow, ID 83843</td>
</tr>
<tr>
<td></td>
<td>(208) 883-0523</td>
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<tr>
<th>Twin Falls:</th>
<th>Living Independence Network Corp. (LINC)</th>
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<tr>
<td></td>
<td>132 Main St. South</td>
</tr>
<tr>
<td></td>
<td>Twin Falls, ID 83301</td>
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<td></td>
<td>(208) 733-1712</td>
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<thead>
<tr>
<th>Pocatello:</th>
<th>Idaho State University Dept. of Speech Pathology &amp; Audiology</th>
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<tbody>
<tr>
<td></td>
<td>650 Memorial, Bldg. 68</td>
</tr>
<tr>
<td></td>
<td>Pocatello, ID 83209</td>
</tr>
<tr>
<td></td>
<td>(208) 282-3495</td>
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<thead>
<tr>
<th>Coeur d'Alene:</th>
<th>Coeur d'Alene Public Library</th>
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<tr>
<td></td>
<td>201 E. Harrison</td>
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<tr>
<td></td>
<td>Coeur d'Alene, ID 83814</td>
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<tr>
<td></td>
<td>(208) 769-2315</td>
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</table>

Idaho Organizations

Council for the Deaf and Hard of Hearing
1720 Westgate Dr., Suite A
Boise, ID 83704
(208) 334-0879 Voice
(208) 334-0803 TTY
(208) 334-0828 fax
Idaho Organizations

Idaho Organizations

**Easter Seal Society**
1350 Vista Ave.
Boise, ID 83705
(208) 384-1910
1-800-374-1910

**United Cerebral Palsy**
5420 W. Franklin Rd., Suite A
Boise, ID 83706
(208) 377-8070 voice
(208) 322-7133 fax

**Multiple Sclerosis Society**
6901 Emerald, Suite 203
Boise, ID 83704
(208) 322-6721

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**Easter Seal Society**
This charitable organization provides services to all disabilities, all ages, statewide.

**Eligibility:** Children or adults with disabilities.

**Coverage:** Technology and equipment services, support groups, disability awareness, information and referral.

**Contact:** Easter Seal Society

**United Cerebral Palsy**
This non-profit organization provides services to persons with disabilities.

**Coverage:** Information and referral services, assistive technology assessment, augmentative communication assessment, adaptive computer center, professional education and training, public demonstration center, funding assistance, and equipment loan.

**Contact:** United Cerebral Palsy

**Multiple Sclerosis Society**
This non-profit organization provides services to persons with multiple sclerosis.

**Eligibility:** Persons with multiple sclerosis, families, and service providers.

**Coverage:** Support groups, tele-conferences, information and referral, newsletter, limited funds, one time payor of last resorts.

**Contact:** Multiple Sclerosis Society
**Comprehensive Advocacy for the Disabled (Co-Ad)**

This nonprofit organization provides advocacy and legal services to persons with disabilities.

**Contact:** Comprehensive Advocacy for the Disabled

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**Idaho State Bar Association**

This organization provides an Attorney Referral Service. It also runs the Idaho Volunteer Lawyers Association which you can call at 1-800-221-3295.

**Contact:** Idaho State Bar Association
Major Funding Sources for Assistive Technology

Below is a list of possible sources of funding for assistive technology and home modifications that meet the needs of older persons. (See page 22 for guidelines for funding request.)

Idaho Assistive Technology Fund

The Idaho Assistive Technology Fund provides older Idahoans with the opportunity to get a loan for the purpose of buying assistive technology. The Idaho Assistive Technology Project established this “low interest” guaranteed loan program, which is financed through cooperation with several banks in Idaho.

**Eligibility:** The borrower with a disability, an immediate family member of a person with a disability or a personal representative, guardian, or other person acting on behalf of a person with a disability. These loans are available for any person with a disability regardless of age or type of assistive technology needed.

**Coverage:** The loan purpose must be connected exclusively with the acquisition, adaptation, or use of assistive technology to be used by the person with the disability. Assistive technology will be given an expansive definition as determined by the Idaho Assistive Technology Project, rather than a restrictive definition.

**Contact:** Idaho Assistive Technology Fund

Idaho State Medicaid Office

Medicaid, Title XIX of the Social Security Act, is a joint state-federal program, which provides health care benefits to low-income recipients. Though the program was established by federal legislation, eligibility and services differ in every state. The Medicaid program reimburses providers for covered supplies and services rendered to qualified recipients.

**Eligibility:** Medicaid services are based upon financial need. Those covered include low-income families with children, pregnant women, elderly citizens, and persons with disabilities.

**Coverage:** The Medicaid program provides only certain services. It does not necessarily cover all the health-related needs of eligible individuals. Currently the program covers a range of durable medical supplies (assistive technology): power wheelchairs, grab bars, hospital beds, patient lifts, walkers, hand-held showers, prosthetic devices, etc. The following Medicaid services can also be viewed as

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**Funding Sources**

Idaho Assistive Technology Fund
129 West Third Street
Moscow, ID 83843
1-800-432-8324

Idaho State Medicaid Office
Division of Welfare
Towers Bldg. (2nd Floor)
Boise, ID 83720
(208) 334-5795
assistive technology funding resources i.e., rehabilitation services, preventive services, occupational therapy, and speech-language therapy. Assistive technology items are categorized by Medicaid as “Durable Medical Equipment (DME). DME is defined as equipment which: (a) can withstand repeated use, (b) is primarily and customarily used to serve a medical purpose, (c) generally is not useful to a person in the absence of illness or injury, and (d) is appropriate for use in the home.

Contact: Idaho State Medicaid Office

Medicare

Medicare is a federal health insurance program, which provides coverage for a limited amount of medical expenses and limited types of medical services. Medicare consists of two parts; the first entitles the beneficiary to inpatient hospital services, home health care, skilled nursing facility care, and hospice care. The second part entitles the beneficiary to physician services and other medical services, counseling, and supplies.

Eligibility: (1) Persons, age 65 and older, who are eligible for Social Security benefits or railroad retirement benefits. Entitlement for Medicare under this category is automatic. No application is required. (2) Persons with disabilities who are eligible for Social Security or railroad retirement benefits. Enrollment is automatic for Medicare after a 24-month waiting period for those individuals receiving Social Security benefits. Other persons who may qualify for coverage include: Persons who are diagnosed with end-stage renal disease (kidney failure); certain aged or disabled persons who do not qualify for part A Hospital Insurance; uninsured persons age 65 or older who were eligible for Social Security but declined coverage; women who do not qualify for dependents’ benefits; and, workers whose earnings were too low or sporadic to qualify for insured status. Call the eligibility contact number for assistance.

Coverage: Assistive technology items are categorized by Medicare as “Durable Medical Equipment” (DME). (See DME definition under Medicaid.) Certain items, which do not meet these criteria, may be covered under a special exception when they serve a therapeutic purpose.

Contact: Questions on eligibility contact:
Local Social Security Administration
or (SSA) Regional Office
Attn: Disability Program Branch
2001 Sixth Ave. M/S RX-50
Seattle, Washington 98121
1-800-772-1213

Questions on coverage:
CIGNA
3131 W. State St.
Boise, ID 83720
1-800-627-2782

Funding Sources
Vocational Rehabilitation (VR) Services

Vocational Rehabilitation is a joint state-federal program to assist individuals with a disability to maximize their employability, independence, and community integration. There may be some regulations that apply to the needs of older persons who are still in the work force or who wish to obtain employment.

Eligibility: A person must have a physical or mental disability which results in a substantial handicap to employment; and there must be a reasonable expectation that, with the provision of services, the person will be able to become employed.

Coverage: VR regulation requires evaluations to determine disability and the scope of services. In regard to assistive technology, VR must determine if an applicant requires “rehabilitation technology” services. By law, each VR client must have an Individualized Written Rehabilitation Plan (IWRP) which is built around the individual’s employment goal. All services, including assistive technology, must flow from that goal and be included in the IWRP.

Contact: Idaho Division of Vocational Rehabilitation

Private Insurance Companies

Private insurance businesses are designed to assist covered individuals pay for medical care. Under our current health care system, insurance is not mandated to cover all individuals or to meet all the health-related needs of covered individuals.

Eligibility: Any person who is either covered under a group policy (generally one purchased by an employer), or who purchases a non-group policy is entitled to the care and services described in the contract.

Coverage: The scope of services included in the policy is structured to meet the acute care needs of individuals.

Contact: Information can be obtained by calling the claims department of the insurance company. This information is generally on the summary of benefits given to policyholders or persons covered under a group plan.
Veterans Administration

This federal agency provides medical assistance to service men and women to help veterans who are filing a disability claim for service connected benefits.

Eligibility: Veterans
Contact: Prosthetic & Sensory Aids Service
VA Medical Center

Service Clubs

Local civic organizations such as Lions, Shriners, Kiwanis, Rotary, Elks, Bell Telephone-Pioneers of America, Sertoma, Quota, Soroptomists, sororities/fraternities, Optimists, Knights of Columbus, and churches.

Eligibility: Varies, usually prefer to assist local individuals.
Contact: Current local organizations.

Employers and Local Business

In our own community, there are many opportunities for private funding through local businesses.

Coverage: Varies, usually after other sources have been exhausted.
Eligibility: Varies, usually assist employees, their families, and local community.
Coverage: Varies, usually after other sources have been exhausted.
Contact: Employer or local business public relations departments.

Senior Reverse Mortgage

In the same way you paid off your mortgage in monthly installments over a number of years, the Reverse Mortgage Program makes payments back to you. The reverse mortgage, insured by the Federal Housing Administration and backed by the Federal National Mortgage Association and Congress, was created as a solution to the financial needs of persons over 62 years of age who face the daily challenge of living on a fixed or limited income.

Eligibility: You must be 62 years of age or older, occupy the home as your principle residence; property should be paid in full, or have a minimal remaining balance.
Contact: AIM Mortgage, Inc.
Directors Mortgage Loan Corporation
Investors West Mortgage Inc.

Funding Sources

Prosthetic & Sensory Aids Service
VA Medical Center
500 W. Fort St.
Boise, ID 83702-4598
(208) 338-7235

AIM Mortgage, Inc.
1-800-505-5600

Directors Mortgage Loan Corporation
1-800-442-4966 ext. 2201

Investors West Mortgage Inc.
1-800-281-3338
American Occupational Therapy Association (AOTA)
4720 Montgomery Lane
P.O. Box 31220
Bethesda, MD 20824-1220
(301) 652-2682
1-800-843-2682 (members only)

American Physical Therapy Association
1111 N. Fairfax Street
Alexandria, VA 22314-1488
(703) 706-3395

American Speech-Language-Hearing Association (ASHA)
10801 Rockville Pike
Rockville, MD 20852
(301) 889-7500 or
1-800-638-8255 or
1-800-638-6868

RESNA
1700 N. Moore Street
Suite 1540
Arlington, VA 22209
(703) 524-6686

National Organizations and Conferences

Professional Organizations and Conferences

American Occupational Therapy Association (AOTA)

Each year, at the AOTA national conference, three major components on assistive technology are offered: (1) Technology Forum, where papers are presented; (2) Technology Lab, where products and new devices are displayed and personnel are available to discuss the latest developments; and (3) the Exhibitors Hall, which is not limited to assistive technology.

American Physical Therapy Association

APTA has special interest groups, workshops, and publications addressing assistive technology. The annual conference includes sessions and exhibits on technology and disability.

American Speech-Language-Hearing Association (ASHA)

ASHA publishes a booklet targeted primarily at consumers, entitled Augmentative Communication, which provides an overview of the topic and includes brief case studies. ASHA also has a packet of information on assistive listening devices.

Interdisciplinary Professional Organizations

Interdisciplinary Society for the Advancement of Rehabilitative and Assistive Technology (RESNA)

RESNA is the premier organization focused on assistive technology. RESNA holds an annual conference devoted entirely to assistive technology. It publishes a journal called Assistive Technology, which is described in this section. In addition, RESNA offers a number of other publications on assistive technology.
International Society of Augmentative and Alternative Communication (ISAAC)

ISAAC publishes a journal entitled Augmentative and Alternative Communication. It also holds a biannual conference and publishes the proceedings in its journal.

Consumer-oriented Organizations

The following organizations offer information on assistive devices for specific disability groups. This information may be helpful to both therapists and consumers. Typically, the information is written in a style that is understandable and informative for consumers.

Organizations for Persons with Vision Impairments

American Foundation for the Blind

This organization offers a free publication entitled Public Education Materials Catalogue.

Association for Macular Diseases

Offers a hot line for information on macular degeneration and produces a newsletter.

Lifeline Systems, Inc.

This organization offers an emergency communications system: A hotline to a central location in the community which will in turn notify a designated family member or the medical facility, ambulance, or fire department. The costs vary.

National Library Service for the Blind and Physically Handicapped

This library service provides a number of services, including Talking Books, publication on audio cassettes, and computer discs. Each state has at least one regional library.
**Consumer Organizations**

**Alexander Graham Bell Association for the Deaf**
3417 Volta Place, N.W.
Washington, DC 20007-2778
(202) 377-5220

**National Technical Institute for the Deaf (NTID)**
1 Lamb Memorial Drive
Rochester, NY 14623
(716) 475-6400

**Self Help for Hard-of-Hearing People**
7800 Wisconsin Avenue
Bethesda, MD 20814
(301) 657-2248 voice
(301) 657-2249 TDD

**The Association for Persons with Severe Handicaps (TASH)**
710 Roosevelt Way N. E.
Seattle, WA 98115
1-800-482-8274

**United Cerebral Palsy Association (UCPA)**
1522 K Street, N. W.
Suite 1112
Washington, DC 20005
(202) 842-1266
1-800-872-5827

**Organizations for Persons with Hearing Impairments**

**Alexander Graham Bell Association for the Deaf**
This association provides information on hearing aids and lip-reading.

**National Technical Institute for the Deaf (NTID)**
A national resource center for technical services, devices, and information for persons who are deaf or hard of hearing.

**Self Help for Hard-of-Hearing People**
This organization and its local chapters provide information, referrals, and support.

**Organizations for Persons with Physical Disabilities**

**The Association for Persons with Severe Handicaps (TASH)**
TASH provides information on severe disabilities and disseminates materials through an active publications department.

**Organizations with a Focus on Developmental Disabilities**

**United Cerebral Palsy Association (UCPA National Headquarters)**
A research, information, and advocacy agency for persons with cerebral palsy and their families. UCPA has 2,215 local affiliated agencies throughout the country.
Organizations with a Focus on Older Persons

American Association of Retired Persons (AARP)

An advocacy group that publishes a monthly journal for older Americans. AARP also publishes awareness bulletins, informational booklets and helpful guides about issues, concerns, and problems related to aging in America.

American Society on Aging (ASA)

The American Society on Aging is a non-profit membership organization that informs the public and health professionals about issues concerning older people. The ASA promotes innovative approaches to meet the needs of older Americans. The organization is taking an active role in exploring the value of assistive technology.

The Gerontological Society of America (GSA)

The GSA is a professional organization that promotes the scientific study of aging in the biological and social sciences. The GSA’s emphasis on improving functional independence in later life includes an interest in rehabilitation and assistive technology.

Organizations with a Cross-Disability Focus

Technology Related Assistance for Individuals with Disabilities Act

Every state operates an information and referral program on assistive technology devices and services. Because each of the state programs has different administrative locations, different names, and different contact numbers, call:

RESNA Technical Assistance Project at (703) 524-6686 for contact information in your state. (See page 43 for complete address.)

In Idaho, contact the Idaho Assistive Technology Project.

Consumer Organizations

American Association of Retired Persons (AARP)
601 E Street, N. W.
Washington, DC 20049
(202) 434-6030

American Society on Aging (ASA)
833 Market Street, Suite 511
San Francisco, CA 94103-1824
(415) 974-9600

The Gerontological Society of America (GSA)
1275 K Street, N. W.
Suite 350
Washington, DC 20005-4006
(202) 842-1275

RESNA Technical Assistance Project
(703) 524-6686

Idaho Assistive Technology Project
(208) 885-3573
1-800-432-8324
Publications, Journals and Catalogs

Many publications are available to help you identify products and learn more about how to use them. A partial list is given below. The types described here are resource guides, books, journals/magazines, newsletters and catalogs.

**Assistive Technology Sourcebook (1990)**
Alexandria Enders & Marian Hall, Editors
RESNA

A thorough review of information acquisition, personal assessment, technology evaluation, application, policy issues, service delivery, and resources. Buy this resource guide first, followed by the TRACE Resource Book described below.

TRACE

This 937-page book is compiled and updated to help professionals, consumers, and family members understand and locate useful tools. The book emphasizes functions, not disabilities, so the products are organized under “communication,” “control,” “computer access,” and “special software.” It includes information resources. The RESNA and TRACE guides will be your critical resources.

**Resources for Elders with Disabilities (1990)**
Resources for Rehabilitation
33 Bedford Street, Suite 19A
Lexington, MA 02173

This 168-page resource guide includes chapters on hearing loss, vision loss, diabetes, arthritis, stroke, and osteoporosis. Each of these chapters includes lists of: (1) publications, and tapes on the disability area; (2) assistive devices and equipment; and (3) organizations that provide information and/or services. The last chapter is entitled “Aids and Devices That Make Everyday Living Easier.”

Cynthia Leibrock and Susan Behar
Van Nostrand Reinhold
115 Fifth Avenue
New York, NY 10003

A 200-page book of full-color photographs and detailed text demonstrating that accessibility is both readily achievable and quite attractive. The book shows adaptable products for the exterior and entrances: the mechanical, electric, and acoustic infrastructure; the ceiling and wall finishes; windows and doors; floor covering options; and furniture of all types.
**Eighty-Eight Easy to Make Aids For Older People (1990)**

Don Cason

This 108-page book contains detailed steps and drawings so people can make or participate in making and installing helpful devices and gadgets for the home, yard and garden.


This 100-page workbook presents an assessment tool for identifying needed home improvements or adaptations that are easy or inexpensive to accomplish. It works through a wide range of activities. If the senior reports difficulty with an activity, the workbook branches off to identify specific functional limitations, present likely problem areas in checklists, then present multiple recommendations for consideration.

**Technology and Aging in America (1985)**

This 496-page book reports on a national study of older Americans and ways in which technology can help in maintaining independence and quality of life. It discusses aging, chronic conditions, prevention, nutrition, medications, cost of health care, and many other topics.

**Assistive Technology**

This journal is published twice per year and focuses on practitioners in assistive technology service delivery. Articles fall into the following categories: applied research; review papers summarizing the work of several investigators; perspectives on issues in assistive technology by recognized authorities; practical notes or papers that describe new methods; and, case studies that present works in progress or studies where there are only a few subjects.

**A. T. Quarterly**

The Technology Related Assistance for Individuals With Disabilities Act of 1988 provides funding to every state for establishing information networks that respond to consumer requests about assistive technology. RESNA provides technical assistance to states. This newsletter provides summaries of important issues and excerpts of state program initiatives.
Breaking New Ground: Cultivating Independence for Farmers and Ranchers with Disabilities

A quarterly newsletter offering features on helpful techniques and technologies, both low-tech and high-tech. Includes a calendar of events, a list of new resources and opportunities to network.

Catalogs (listed by assistive technology category)

Commonly used assistive technology catalogs are available from vendors. Following is a partial listing by assistive technology category. (See pages 9-11.) Please call the Idaho Assistive Technology Project at 1-800-432-8324 for expert advice about devices and services.

**Sensory enhancers:** vision and hearing devices, augmentative communication devices, text magnifiers, scanners with speech synthesizers and voice analyzers.

- Ablenet Inc. 800-322-0956
- Adamlab 248-362-9603
- Augmentative Communication consultants, Inc. 800-982-2248
- Crestwood Co. 414-352-5678
- Deaf Communications of Cincinnati 800-775-3323
- Dynavox 800-344-1778
- HARC Mercantile, Ltd. 800-445-9968
- Human Ware 800-722-3393
- Kurzweil 800-894-5374
- Optalec-low vision 800-828-1056
- Phonic Ear 800-227-0735
- Prentke Romich 800-262-1933
- Word +, Inc. 800-869-8521
Catalogs

**Keyboard alternatives and emulators:** communication and work related devices, alternatives to the standard computer keyboard used for inputting data. This category of assistive technology would include such items as joysticks, light pens, touch screens, and fist or foot keyboards.

- Solutions for Humans 800-953-9262
- Computer Prompting 800-977-6678

**Environmental control units:** home modification, adaptations of light switches, timers, and telephones; robotics; additional external switches which can be activated by pressure, eyebrows or breath; and low tech devices or adaptations of existing tools.

- Door-o-matic 800-543-4635
- Tash 800-463-5685

**Daily organizational uses, instructional uses:** pill dispensers, electronic calendars, timers; specifically designed computer software such as computer-assisted instructional programs, information management and record keeping programs.

- Apple 800-692-7753
- Attainment Company 800-327-4269
- Dunamis, Inc. 800-828-2443
- Franklin Electronics 800-525-9673
- Hatch 800-624-7968
- Compass Learning 800-247-1380
- Lakeshore Learning Materials 800-428-4414
- Laureate 800-562-6801
- Mayer Johnson Co. 800-588-4548
- Riverdeep 800-825-4420
- Technology for Education, Inc. 800-370-0047

*Weekly organizer for medications*
**Motivational and self-help devices:** ergonomic cooking utensils, remote controls, toys, or games that encourage the person to interact with his or her environment through exploration, manipulation, work and play.

- Danmar products 800-783-1998
- Sammons Preston/Rolyan 800-323-5547
- Flaghouse 800-793-7900
- Maxi Aids 800-522-6294
- Ultralite Everest & Jennings 800-322-4681

**Mobility devices:** canes, walkers, wheelchairs, lifts, modified vans, power scooters, that make it easier for people with disabilities to move about independently in the home, workplace and community.

- Amigo 800-248-9130
- Bruno Independent Living Aids 800-882-8183
- Invacare 800-333-6900
- Ricon 800-322-2884
- RJ Cooper & Associates 800-752-6673
- Rifton 800-777-4244
General purpose catalogs with products for enhanced living

<table>
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<tr>
<th>Company</th>
<th>Address</th>
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<th>Additional Information</th>
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</thead>
<tbody>
<tr>
<td>Sears Home Health Care</td>
<td>9804 Chartwell, Dallas, TX 75238</td>
<td>1-800-326-1750 voice, 1-800-733-7249 TTD</td>
<td></td>
</tr>
<tr>
<td>Sammons Preston</td>
<td>P O Box 5071, Bolingbrook, IL 60440-5071</td>
<td>1-800-323-5547 voice, 1-800-547-4333 fax</td>
<td>or <a href="http://www.sammonspreston.com">http://www.sammonspreston.com</a></td>
</tr>
<tr>
<td>Maxiaids</td>
<td>P O Box #3209, Farmingdale, NY 11735</td>
<td>1-800-522-6294</td>
<td></td>
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<tr>
<td>Mayer-Johnson Co.</td>
<td>P O Box 1579, Solana Beach, CA 92075-7579</td>
<td>(619) 550-0084 voice, (619) 550-0449 fax</td>
<td>or <a href="http://www.mayer-johnson.com">http://www.mayer-johnson.com</a></td>
</tr>
<tr>
<td>Radio Shack</td>
<td>P O Box 1981, Fort Worth, TX 76101-1981</td>
<td>1-800-843-7422 voice, 1-800-821-1959 fax</td>
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Electronic Resources

The term telecommunications is used for electronic information processing. Electronic pathways are used to channel data, voice or even pictures, graphs, and video information. These electronic pathways consist of wires, which just within the past 100 years have been laid down around the world like a web. More recently, we have fiber optic systems that include the use of microwave and satellites.

Networking can be as simple as linking two computers, or several in close proximity, or large numbers in a wide area network. The Internet is an international network of interconnected computer networks that descend from a defense-related network called ARPAnet. Through the Internet, a computer with a modem can access the World Wide Web. The World Wide Web defines itself as a “multimedia information system” that permits anyone anywhere to disseminate or receive information in text, audio, and full-motion video through the Internet.
The beauty of networking is the ease and speed with which large amounts of information can be transferred, combined with the computer’s ability to search through large amounts of information for precisely what is needed (usually in databases which are collections of carefully organized information).

Three valuable features offered by electronic networks include: **Bulletin board services, electronic mail** and **access to databases**. Bulletin boards are used for “posting messages.” A person looking for information could post their question on an appropriate electronic bulletin board. Someone reading the question could post the answer. Electronic mail, (e-mail) is used for private communication, usually between two or a few people. The communication or message can be sent almost instantly, and sits in an “electronic mailbox” until the receiver calls up the message on his or her computer. A person can use a “sort” variable to search for information from a database. The category can be narrowed very quickly to focus on the important information.

**Networks**

There are a number of networks that offer services and information relating to access issues and technology. They are described in the following section. Some of this information was collected and published by the RESNA Technical Assistance Project and is reproduced here with their permission. For a monthly fee, many local computer businesses provide Internet access.

**World Wide Web (W3)**

**Description:** The World Wide Web connection gives you access to hundreds of networks, databases, bulletin boards, and new directories, in addition to links to discussion, news, and information groups under development through other networks.

**How to access World Wide Web (W3):** You need a computer (terminal, PC, MAC, or workstation) with a direct connection to the Internet, and a copy of a suitable client browser program such as Mosaic, Cello, Lynx, or WWW.

CompuServe Disability Forum

**Description:** An electronic network with many bulletin boards and databases.
Information can be found on a number of subjects, such as the weather, the stock market, sports and health care. CompuServ services that provide information on assistive technology and/or disabilities include the Handicapped Users Database, Disabilities Forum, Rehabilitation R&D Database, and the Retirement Living Forum.

**Target Audience:** Individuals interested in telecommunication services such as electronic mail, bulletin boards, and on-line conferencing.

**How to access:** Subscription to CompuServ.

**Cost:** Connecting fee and monthly fee.

**America On Line (AOL) Corporate**

**Description:** AOL is an electronic network that provides bulletin boards, databases, electronic mail (e-mail) and on-line conferencing. Some AOL bulletin boards are Community Center, the People Connection, Better Health and Medical Forum, and the AARP Forum. A tool called “chatrooms” will put you in touch with other people with similar interests. There are many senior citizen chatrooms where you can make friends on-line. You can subscribe to Instant Messages, a tool that allows messages from your family and friends to pop up on your screen automatically for instant communication.

**How to access:** Subscription to AOL by calling the 800 number.

**Cost:** Connecting fee and monthly fee.

**On-line Databases**

A database is a set of documents organized for easy search and retrieval. The purpose of the database is to archive information and provide a comprehensive search of information on a particular topic.

**Abledata**

**Description:** An information source on disability-related products, this database contains more than 23,000 commercially available products from approximately 2,500 manufacturers. Detailed information is provided for products in all aspects of independent living, personal care, transportation, communication, and recreation.

**Target audience:** Individuals interested in assistive technology devices and equipment.

**How to access:** The database is accessible on-line at: http://www.abledata.com
**Apple Solutions**

**Description:** Database of products and resources for Apple computers. The database contains more than 1,000 entries, which are updated on a regular basis.

**Target Audience:** Persons interested in products for the Apple computer that can be used by persons with disabilities.

**Hardware/software needs:** Telecommunications software and modem.

**How to access:** Apple Solutions is accessible via AppleLink or SpecialNet.

**Cost:** Standard phone charges.

**Electronic Bulletin Boards**

Bulletin boards are public message systems that are used by individuals or agencies to post information. A bulletin board provides access to current information and the latest developments that may be of interest to multiple users. SpecialNet lists more than 50 bulletin boards containing information on topics such as special education software, technology, current legislation, and assessment. Many bulletin boards are available at no cost to the user when accessed through a local phone call.

**RESNA**

**Description:** Bulletin board providing an opportunity for states and organizations to share information of interest as they develop and administer assistive technology services.

**Target audience:** States and organizations interested in assistive technology services.

**Hardware/software needs:** Telecommunications software and modem.

**How to access:** Access is via SpecialNet.

**Cost:** Standard telephone charges in addition to subscription to SpecialNet.
References


Notes


Simple Assistive Technology and Home Modification Tips

The following suggestions will help make your home barrier-free to accommodate your accessibility needs. This, in turn, will make your home more comfortable.

Kitchen area:
- Install a mirror above the stovetop. This allows wheelchair users to easily see what is cooking.
- Install Braille controls. Many appliance manufacturers will provide Braille controls at no extra cost.
- Place a mixing bowl in a top drawer; close the drawer as much as possible. This will keep bowl in place while working.
- Add straps to the refrigerator door, drawer handles, and cabinets to make pulling easier.
- Attach leg extenders to chairs and tables to make standing and sitting less difficult.
- Replace shelves with pull out trays, bins, pot racks, etc. Add lazy Susan shelves inside corner cabinets.
- Remove cabinet doors in front of sink and food-preparation area to allow legroom for wheelchairs.
- Mount all wall switches and electrical outlets where they are easy to reach or add switch and electrical outlet extenders to existing ones where possible.
- Use a rolling cart with shelves and hooks for utensils as a useful kitchen aid.
- Add a wall storage rack to keep frequently used items easily accessible.
- Mount a single-lever faucet close to edge of counter for easier accessibility.
- Add oversized cabinet knobs or tie rope loops to knobs to make them easier to grasp or pull.

Bathroom area:
- Install a shower bench with grab bars.
- Build low threshold to keep water in shower area but will allow wheelchair access.
- Remove cabinets under and/or lower sink to allow for wheelchair. Hot water and drainpipe should be insulated or recessed to protect legs of wheelchair users.
Mount mirrors low enough to be viewed from a wheelchair, or simply angle mirror downward.

Mount outlets and wall switches at chair height. All bathroom electrical outlets should be shock-protected with ground-fault circuit interrupters.

Install grab bars that support a minimum of 250 lbs. Some codes require standard height above floor or fixtures, but bars should be adjusted to suit users.

Hang bathroom door to swing outward for exit safety and to allow more room in bath area.

Mount grab bars where support may be needed, such as in shower, bathtub, above toilet, along doors, etc.

Install hand held shower unit which offers more flexibility than fixed shower head.

Allow 5-ft turning radius for wheelchair. A minimum bathroom area of 47.5 sq. feet (including fixtures) is recommended.

Other house areas:

Build a short ramp to eliminate the steps between split-level floors. A grab bar may be added to the doorway to provide extra pull.

Widen doorways to the minimum clearance of 32 inches, which is required for persons using wheelchairs or walkers.

Install second peephole viewer at a height of 42 inches for wheelchair users.

Install wall outlets at a minimum of 28 inches above floor.

Add an adjustable bracket to make clothes rack accessible to wheelchair users.

Adjust the height for wall mounted objects such as thermostats, telephones, curtain pulls and switches to the recommended maximum of 48 inches.

Modify door guides to a height of one half inch. Special low clearance thresholds are available for track type sliding doors.

Use tight weave carpet with or tile to make wheelchair use and walking easier.

Install threshold strip to ease transition between floor and carpet.

Build ramps with the recommended ramp pitch: 1 inch of rise for each foot of distance (1:12). Very short ramps may be steeper, but grab bars must be installed as aids.

Use a switchback design to reduce ramp run.
The Idaho Assistive Technology Center and the Assistive Technology Resource Centers provide public education, assistive technology fairs and community outreach presentations across the state of Idaho.