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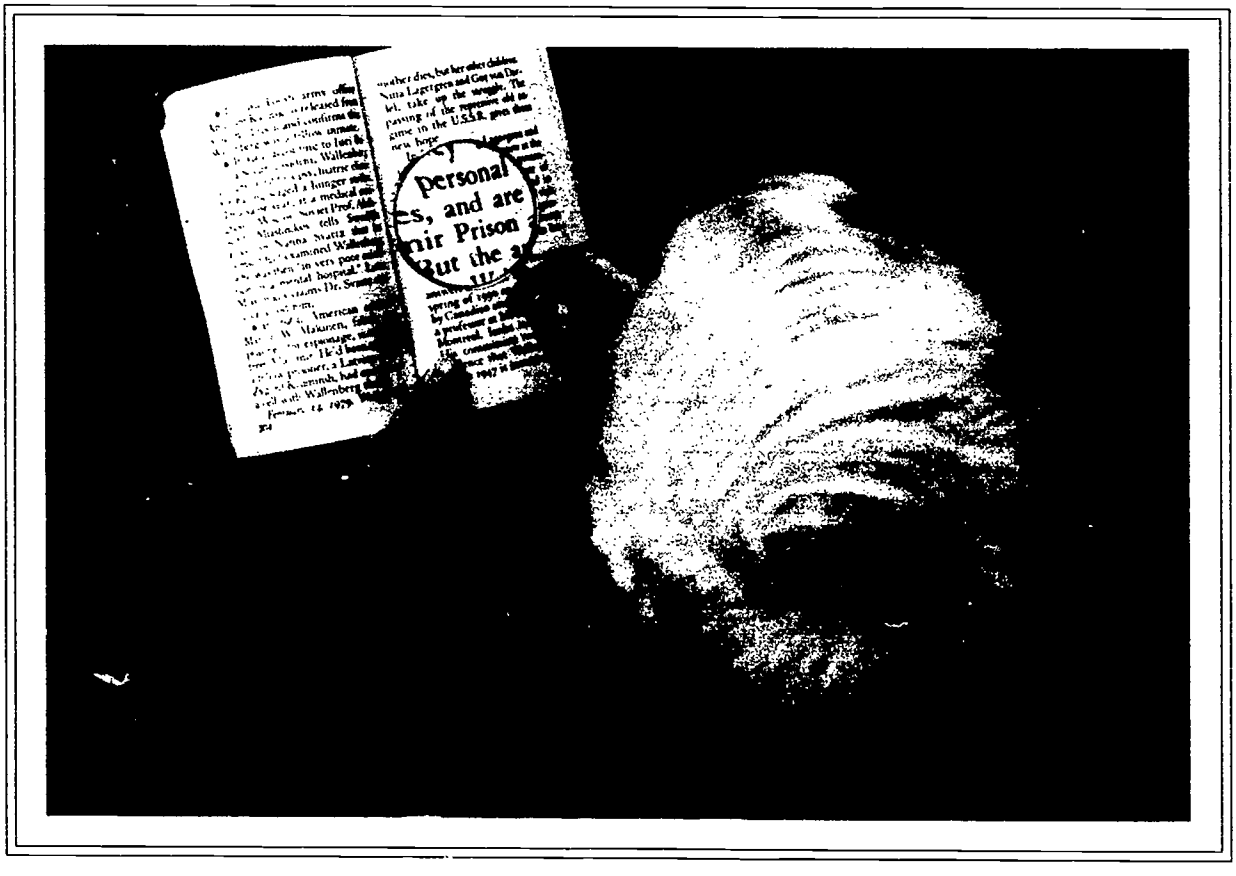
ABSTRACT

This booklet is designed to help persons who have elderly family members or who work with older adults understand and help compensate for the sensory changes that occur in later life. It contains sections on vision, hearing, taste and smell, and touch. Discussed in the section on vision are the following: common age-related changes, eye diseases or conditions, low vision aids, suggestions for helping individuals experiencing loss of vision or severe vision problems, types of eye care professionals, and related resource materials and organizations. The section on hearing includes information on these topics: types of hearing loss, reactions to hearing loss, ways of helping persons with hearing loss, sources of medical help, and the benefits and use of hearing aids. Included in the section on taste and smell are a description of common age-related changes in senses of touch and smell and ways of helping persons with taste or smell disorders. Age-related changes in sense of touch, precautionary measures to compensate for changes in sense of touch, and "touch hunger" are examined in the section on touch. The importance of attitude in coping with age-related sensory changes is emphasized. Concluding the booklet is a listing of related extension service publications on aging and aging-related problems. (MN)

SENSORY CHANGES IN LATER LIFE



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SENSORY CHANGES IN LATER LIFE

The efficiency of the sensory organs—vision, hearing, taste, smell, and touch—declines with age, but the age of onset and rate of decline differ markedly among people. This publication explains the sensory changes older people experience and suggests what you can do to help.

What is it like to hear only a mumbling voice when someone speaks to you? How does it feel to have poor vision and no longer be able to read a newspaper or clearly see another person's face? Why do some older people complain that food doesn't taste as good as it did when they were younger?

The senses become less efficient with age. But age is not the only factor causing deterioration in the senses. Disease and environmental factors are also important. Intense and prolonged noise affects hearing, smoking reduces taste and smell sensitivity, and diabetes may affect vision.

Sensory changes can influence the way we see, hear, taste, smell, and respond to touch and pain. This in turn affects how we experience the world and react to things. A significant sensory change can rob us of many simple pleasures and complicate the tasks of daily living. It may mean reduced mobility, increased dependence on others, inaccurate perception of the environment, reduced ability to communicate and socialize, or loss of self-esteem.

Sensory changes vary from person to person. Fortunately, until their mid 80s most older adults are free of major sensory problems.

If you experience sensory changes as you age, understanding these changes can help you respond to them. For example, you can learn to adapt your environment and behavior so that changes in vision and hearing don't limit you greatly.

If you have elderly family members or if you work with older people, it is especially important to understand these changes. If you lack knowledge and understanding, you may become frustrated, have unrealistic expectations, or label an older person as senile, confused, or failing. Understanding these changes can increase your ability to provide positive support and make changes that will enhance the older person's quality of life. You probably will find yourself focusing more on what a person can do and less on what he or she can't do.

VISION

Changes in vision and hearing are particularly important because they can affect the person's ability to function in the physical environment and may lead to isolation.

Common Age-Related Changes

Several aspects of vision change with age. Normal age-related changes in vision include:

- Decrease in sharpness of vision (visual acuity)
- Decrease in the ability to focus on objects at different distances
- Decrease in ability to discriminate between certain colors
- Decrease in ability to function in low light levels and adapt to dark
- Decrease in ability to adapt to glare
- Decrease in ability to judge distances

Most older people have fairly good vision into their 70s and 80s. However, an estimated 10 percent of people aged 65 to 75 have impaired vision to such a degree that it affects their ability to function; 16 percent of people aged 75 to 84 and 27 percent of those 85 years and older have this level of impairment.

Persons with vision loss may experience problems with mobility, poor orientation, and frightening visual impressions that resemble hallucinations. They often feel more vulnerable to danger and crime. Otherwise fastidious people may wear soiled clothing because they can't see stains and food spills. They may reduce or eliminate such pastimes as reading or watching television.

According to the National Center for Health Statistics, vision impairment is strongly associ-

ated with greater difficulty in performing daily activities such as walking, getting outside, and transferring in and out of a bed or chair. Poor vision also increases the likelihood of falling.

Acuity. The most common change with age is a decrease in the ability of the eyes to see clearly. Visual acuity is generally at its maximum in the late teens, remains fairly constant until age 45 to 50, then gradually declines. The Center for Health Statistics reports that by age 65, one-half of all people have a visual acuity of 20/70 (what can be seen from 70 feet by a person with perfect vision can be seen only from 20 feet) or less, while fewer than 10 percent of people 45 and younger have vision poorer than 20/70.

Ability to focus. With age, the lens of the eye becomes less flexible, gradually losing its focusing ability. This condition, called *presbyopia*, usually occurs in the 40s, and results in difficulty reading fine print and seeing nearby objects clearly. Although reading glasses and bifocal lenses help, many people still find it difficult to see small details, such as the hole of a needle and warning labels on medications.

The ability to shift focus also becomes slightly delayed. For example, an older person's eyes take longer to change focus from looking at playing cards in his or her hands to cards in the middle of the table.

Color discrimination. All colors tend to look faded and dull to an aging person. Because of yellowing in the lens of the eye with age, colors at the blue end of the light spectrum appear to fade the most and to merge into greens. As a result, an older person may not be able to discriminate between shades of blue and between blues, greens, and violets. For example, one 90-year-old woman could not see the blue flowers in a bouquet because the blue blended into the green leaves. An older person's outfit of different shades of blue may seem poorly coordinated, but to the older individual the colors may look the same. It's important not to interpret an inability to identify colors as a sign of confusion. Yellows, oranges, and reds are more easily distinguished by older adults.

Loss in the ability to see certain color intensities also decreases the older person's depth perception, that is, the ability to judge distances. It becomes more difficult to distinguish steps from risers if they are the same color.

Light levels. As we age, the pupils of our eyes become less adaptable to changes in light. An older person entering or leaving a darkened room needs more time than a younger person to adjust to changes in light levels. Abrupt changes in lighting can be hazardous and cause falls or other accidents.

Older people need more light to see effectively. Light levels required by healthy 60-year-old eyes approximately double those needed by a 20-year-old. Generally speaking, a person age 80 needs approximately three times more light than a young adult. In lowly lit areas, an older person may not see potential hazards or recognize familiar people. The dimly lit aisles of movie theaters can be treacherous, and reading a menu in a restaurant with "romantic" light levels may be impossible.

Glare. Glare that is hardly noticeable to a younger person may create difficulties for an older person. Reading a magazine with shiny pages can be difficult. Glare from shiny floors, sunlight, or direct lighting is intensified. Increased glare causes distortion.

Many older people have difficulty driving at night because they experience momentary blindness from the glare of oncoming traffic and reflections from wet pavement.

Eye Diseases or Conditions

Four eye diseases are more common after age 65: cataracts, glaucoma, macular degeneration, and diabetic retinopathy. Early detection and treatment are important. Otherwise these diseases can lead to major loss in vision.

Cataracts. A cataract is a clouding of the normally clear lens of the eye. It is an actual change within the lens, not a growth or film over the eye. The result is that the lens can't transmit a clear image to the retina at the back of the eye. Vision becomes faint, hazy, or blurred.

As one older man said, "It's like looking through waxed paper."

Cataracts usually take years to develop and may affect only one eye or both eyes at different rates. Some experts believe everyone would develop cataracts if they lived long enough.

Cataracts vary in size and density and don't always affect the entire lens. Some remain small and don't seriously affect vision. Cataracts impair vision only when they develop on a portion of the lens that is in the line of sight.

SYMPTOMS OF A CATARACT

Symptoms vary depending on the location and density of the cataract, but may include:

- Blurring or dimming of vision
- A film-like screen or fog over the eye
- Sensitivity to light and glare
- Change in pupil color from black to milky grey, yellow, or white
- Faded appearance of colors
- Double vision or spots

Surgery, which is nearly always successful in correcting vision loss caused by cataracts, is recommended when a cataract starts interfering with a person's life. Once the natural lens is removed, a substitute lens is needed to focus the eye. Today a plastic lens is usually implanted to replace the lens removed during cataract surgery. When both eyes have cataracts, the operation on the second eye is done after the first eye has stabilized following surgery.

Glaucoma. Glaucoma results in a gradual loss of peripheral vision, which is what makes you aware of things beside, above, and around you, even when you look straight ahead. Loss of this side vision may cause someone to bump into things or not see passing cars in the next highway lane. As the field of vision becomes smaller, the person experiences "tunnel vision," which can be likened to looking through a hollow tube or rolled-up newspaper. In order to see something to the side, the person must turn his head and be in a direct line with the object. If not treated, glaucoma can progress to blindness.

Glaucoma is caused by faulty drainage or an increased production of eye fluids. The fluids build up in the eyeball, increasing pressure in the eye. If pressure is elevated long enough, it slowly damages the optic nerve, resulting in vision loss.

Although glaucoma can develop suddenly and without warning, it usually develops gradually. It has been called "the sneak thief of sight" because in the early stages you don't feel or notice anything unusual. By the time symptoms occur, loss of vision already has taken place.

SIGNS OF ADVANCED GLAUCOMA

Common signs and symptoms of advanced glaucoma are:

- Blurring of vision
- Appearance of colored rings ("halos") around lights
- Pain or redness of the eye
- Loss of side vision with a tunnel or gun barrel effect

Whenever these symptoms appear, see an ophthalmologist immediately. Early diagnosis and treatment can control glaucoma. An ophthalmologist can detect early changes before you're aware of them. Regular eye examinations are one of the best defenses against glaucoma. Tonometry, a simple and painless test, measures pressure in the eye and can show the development of glaucoma before symptoms are noticeable.

Usually glaucoma is effectively treated with eye drops or oral medication to either open up the eye's drainage system or slow the manufacture of fluid. Surgery or laser treatment is sometimes necessary to unplug a blocked drain or create an artificial drainage.

Macular degeneration. Macular degeneration is caused by damage to or breakdown of the macula, an area 3/16 inch in diameter, in the retina. It causes loss of central or "straight

ahead" vision. When the person looks directly at an object, it may appear blurred, distorted, or completely gone.

Sometimes only one eye is affected. If both eyes are affected, identifying faces of friends and family, reading, doing close work, watching television, or driving become extremely difficult or impossible. A small number of people can be helped with laser treatment. Early treatment is critical.

Macular degeneration does not progress to total blindness. Peripheral vision is not affected, so the area around the blurred area may be quite clear. This side vision can be used to accomplish many daily tasks and maintain independence. Low-vision aids are particularly effective in cases of macular degeneration.

Macular degeneration is becoming more of a problem as people live longer. One study showed that the prevalence rate rises from 1.6 percent for people aged 52 to 64, to 11 percent for those 65 to 74, to 27.9 percent at ages 75 to 84. Nearly 30 percent of older people have some degree of macular degeneration.

SIGNS OF MACULAR DEGENERATION
Some of the signs of macular degeneration are:

- Dark, empty, or blurred space appears in the center of vision
- Parts of words on a page blur or appear to "disappear"
- Straight lines (e.g., telephone poles, door frames, sides of buildings) appear bent or wavy

If you notice any of these symptoms, see an ophthalmologist immediately.

Diabetic retinopathy. Diabetic retinopathy, one of the possible complications of diabetes, occurs when small blood vessels within the retina weaken. In the early stages, blood vessels may leak fluid and blur the central field of vision. Vision also may fluctuate so that the person does not see equally well at all times.

In later stages, new blood vessels may grow on the retina or optic nerve and release blood into the center of the eye, resulting in a serious loss of vision. The retina also may become detached from the back of the eye. If untreated, blindness can occur.

Not all persons with diabetes develop diabetic retinopathy. However, the incidence does increase with the length of time a person has diabetes. Annual ophthalmological examinations are recommended so that the condition may be diagnosed, if present, and treated.

Two forms of treatment are used. In laser photocoagulation therapy, a powerful light beam is used to stop leaking blood vessels, reduce abnormal vessel growth, and seal a detached retina. Vitrectomy is a surgical procedure in which the normally clear gel substance in the center of the eye, now blood-filled because of retinopathy, is removed and replaced with a clear artificial solution.

Low Vision Aids

When sight can't be restored, low vision devices can help a person use remaining vision more effectively. Low vision aids include a variety of optical devices such as simple magnifying lenses, light-filtering lenses, telescopic lenses for distance vision, and electronic devices.

It's sometimes difficult to learn to adapt to the "new vision" low vision aids provide. Using a low vision aid may mean having to learn a new way of reading, making a different type of head movement, and adjusting to a smaller field of view. Therefore, it's important to have a realistic understanding of what a low vision aid can and can't do, and how to use it correctly. A different low vision device may be required for different tasks—for example, one for close work and another for seeing at a distance.

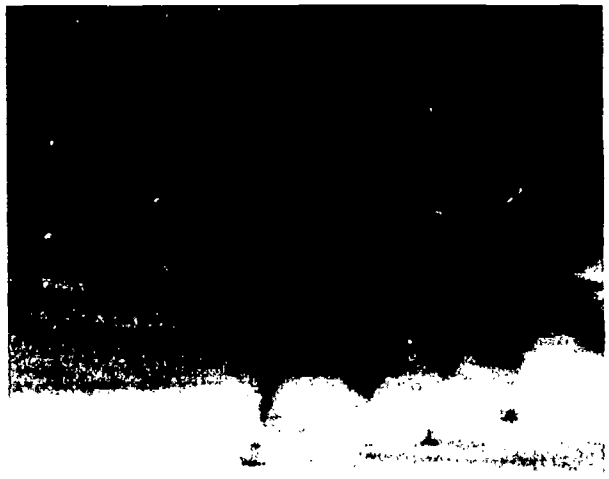
People with low vision also can borrow talking books from the Library of Congress through its network of cooperating libraries and state commissions for the blind.

How to Help Someone Who Has Loss of Vision

Use color contrast. Older people require

HOW DO THINGS LOOK WHEN YOU HAVE A VISION PROBLEM?

Normal Vision. A person with normal vision or wearing lenses to correct vision to 20/20 sees the entire scene.



Cataracts. Cataracts cause clouding of the lens and loss of detail in what a person sees. They do not affect the field of vision.

Glaucoma. Untreated glaucoma can destroy side vision, leaving "tunnel vision"—a person sees only the center of the field.

Macular Degeneration. This is the most common eye disease. Macular degeneration causes loss of vision in the central field. A dark or empty area appears in the center of vision.

Diabetic Retinopathy. Leaking retinal blood vessels cause areas of blurred vision across the field of vision.

greater contrast between background and objects to "see" objects most effectively. For example, use light-colored dinnerware on a dark tablecloth and light-colored mugs for coffee; paint doorways a darker color than the walls; and mark the edges of steps to distinguish the riser from the flat surface. Color contrast can mean the difference between safety and injury. The lack of color contrast, for example, between street curbs and sidewalks and on escalators can increase the risk of falls.

All print materials should use black ink on light-colored paper. Black ink on white or light yellow paper is most visible. The print fades into the background when a colored ink is used on colored paper, such as brown ink on tan paper or blue ink on pink paper.

Use coding schemes. For example, color at different points on washing machine and oven dials can make it easier to find different dial settings and consequently, enhance independent living.

Control glare. Shield glare from interior light sources. Cover windows with mini-blinds, sheer drapery, or light-filtering shades to control sunlight entering a room. Choose matte finishes for wall coverings and counter tops. Avoid intense light sources and shiny surfaces (e.g. vinyl furniture, marble, glass, chrome, and highly polished floors) in planning an environment.

Increase light levels. Most important is to distribute light evenly and minimize glare. Increasing light levels by simply using higher wattage light bulbs can increase glare and decrease an older person's ability to see. Provide additional lighting where close work activities such as cooking, taking medication, reading, and writing take place, or where safety hazards exist. Adequate lighting is especially important in the bathroom and in stairways, common sites of accidents in the home. Nightlights in the bedroom and bath can greatly reduce the possibility of injury. Incandescent light bulbs (regular household bulbs) are better than fluorescent lights for older people.

Give the person time. Older people sometimes walk slower because they no longer get as many visual clues from the environment. Allow time for a person to adjust to light changes when going from a brightly lit area to a darkened area and vice versa.

Provide materials with larger print. Materials for the elderly should use type no smaller than 10 or 12 point size, depending on the typeface. The minimum size appropriate for people with vision disabilities is 14 point, almost twice the size found in most books, magazines, and newspapers.

This is fourteen (14) point type.
This is twelve (12) point type.
This is ten (10) point type.

Many large print books and magazines are available. Older people find Roman or serif-style type (such as the type used in this publication) easier to read. Clocks, bathroom scales, cookbooks, telephones, and timers are a few items available that offer the option of large print.

Encourage regular eye examinations. Early detection and treatment can often control or correct most vision problems. Annual eye examinations are suggested unless vision or other health problems necessitate a more frequent check-up.

How to Help Someone Who Has a Severe Vision Problem

Announce your presence. When approaching, be sure the person is aware of your presence. Otherwise, you may unintentionally frighten him or her.

Tell what you are going to do. Give advance information about what you are going to do—for example, moving someone in a wheelchair. This helps him or her feel more secure. If you are giving an injection, tell the person when and where he will feel it.

Simplify the visual field. To prevent accidents, keep the floor uncluttered and remove "extra" objects from tables, nightstands, and other areas. The fewer objects on a surface,

the easier it is to distinguish them.

Keep objects in the same place. If you move objects in the person's environment, put them back where they were. If the location of furniture or objects must be changed, be sure the person is aware of the change.

At mealtimes, put silverware, cups, glasses and dinnerware in the same places each time. Describe the food served and its location on the plate. Use the face of a clock to describe where the food is: Turkey is at 3 o'clock, broccoli at 6 o'clock, and potatoes at 9 o'clock.

Talk directly to the person. Remember, because a person can't see, it doesn't mean he or she can't hear or talk.

Orient the person to an unfamiliar environment. A new and unfamiliar setting can frighten a person and decrease confidence in ability to function independently. Make sure the person knows where everything is located. Describe the setting—who is there, where they are, objects that may get in the way, and location of rooms.

Offer assistance. But don't insist on helping someone who doesn't want help. If you don't know how to help, ask.

Use the person's remaining senses. Use touch and other senses to compensate for lack of sight. Touch lightly to get the person's attention. Hold his or her hand to reassure that you are listening. Tell the perso about changes in the environment such as steps or changes in walking surfaces. Describe the surroundings. Give a parting word or comment when you leave to prevent the person from continuing to talk after you have walked away.

Know how to be a sighted guide. When walking, offer your arm for the person to take just above the elbow (some people have a preference for one arm over the other). You will be walking a half-step ahead, which helps the person anticipate your movements. Most important, don't grasp and push the person in front of you. This makes him or her feel insecure. Tell when you are approaching steps.

Obtain low-vision aids. These devices help a person make the best possible use of remaining vision.

Who Are the Eye Care Professionals?

Ophthalmologists. Physicians (M.D.'s or osteopaths) who specialize in the diagnosis and treatment of eye diseases and vision problems, and perform eye surgery.

Optometrists. Specially trained professionals who are licensed to practice in selected areas of eye care. They screen for vision problems and prescribe glasses or contact lenses. Referral is made to ophthalmologists for diagnosis of suspected eye diseases and medical treatment or surgery.

Opticians. People who fit and adjust eyewear prescribed by ophthalmologists or optometrists.

Other Resources

For more information, contact the following organizations:

- ❑ Your local State Commission for the Blind and Visually Impaired
- ❑ The National Center for Vision and Aging
  111 East 59th Street
  New York, NY 10022
  (800) 334-5497 or (212) 355-2200
- ❑ American Foundation for the Blind
  Program Services
  15 West 16th Street
  New York, NY 10011
  (212) 620-2063
  Has catalogs of low vision devices.
- ❑ National Library Service for the Blind and Physically Handicapped
  Library of Congress
  Washington, DC 20542
  (202) 707-5100
  Recorded books and magazines on cassettes and disks are available to persons who can't see well enough to read print.

HEARING

A hearing loss is potentially the most serious of the sensory impairments because it is our "social sense." Unlike poor vision, hearing loss rarely inspires empathy and understanding. The seeing-eye dog, thick glasses, and white cane all help identify the blind and visually impaired, but the person who is hard of hearing is not as easily identified. In regard to her deafness, Helen Keller, who was both deaf and blind, stated:

"I am just as deaf as I am blind. The problems of deafness are deeper and more complex, if not more important than those of blindness. Deafness is a much worse misfortune. For it means the loss of the most vital stimulus—the sound of the voice that brings language, sets thoughts astir, and keeps us in the intellectual company of man."

Hearing loss affects more older people than any other chronic condition. From age 20 to 60, the rate of hearing impairments increases from 10 to 75 per 1,000 people. Between the ages of 60 and 80, the rate increases to 250 per 1,000 people. Approximately 30 to 50 percent of all older people suffer a significant hearing loss that affects their communication and relationships with others.

Hearing loss can be devastating. It can lead to withdrawal, isolation, and depression. Even a slight loss can be emotionally upsetting, particularly if it interferes with understanding family and friends. Trying to understand conversation becomes frustrating and exhausting. Many people will withdraw from group situations, restrict their activities, and stay at home when it becomes difficult to listen and understand the

conversation around them.

Misunderstood conversations can lead to suspiciousness, paranoia, disagreements, and alienation from family and friends. Older people who try to cope by responding to what they think is said may be viewed as cognitively impaired, rather than hearing impaired.

"Silence is golden. But the silence that comes from a hearing loss can make for loneliness." —*84-year-old man*

Travel by public transportation can be difficult, particularly if announcements over intercoms are unclear. Sounds that shape our daily lives—doorbells, telephones, alarm clocks—may not be heard. A person with impaired hearing is at high risk if he or she doesn't hear warning signals such as fire alarms and horns. A hearing loss may complicate adjustment to other age-related losses.

Types of Hearing Loss

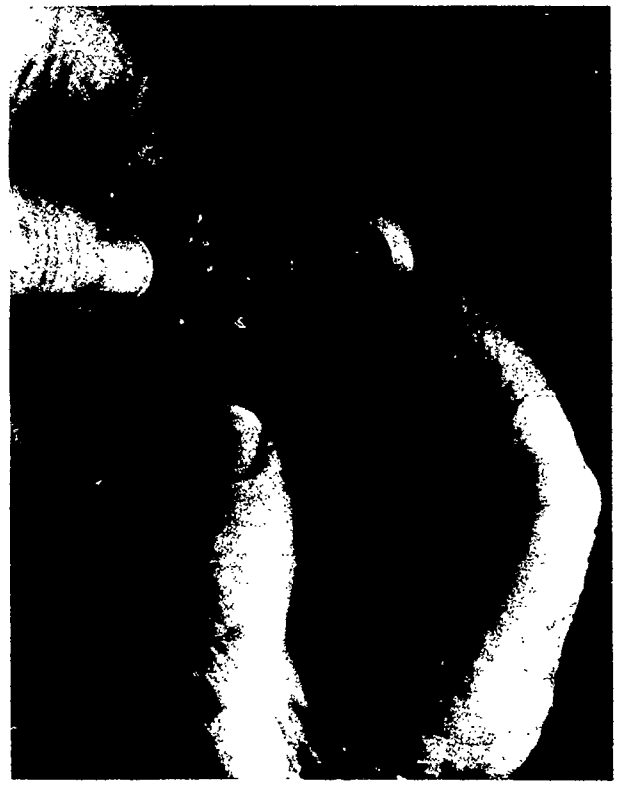
Hearing loss is usually classified as either *conductive or sensorineural*, reflecting the location at which normal hearing is interrupted. Some people experience both types of losses, resulting in a *mixed hearing loss*.

Conductive loss. With a conductive loss, sound waves are not conducted to the inner ear. The cause may be an obstruction in the outer ear (an accumulation of wax or blockage caused by swelling and pus) or a problem in the middle ear (fluid in the middle ear or fixation of one or more of the middle ear bones). As we age, ear wax becomes harder and drier, increasing the likelihood of a wax plug.

All sounds seem muffled or faint. However, the person's own voice may seem louder than usual for him or her. As one man stated, "It sounded to me like I was talking with my head in a jar." As a result, the person may speak softly.

Many conductive hearing losses can be corrected medically or surgically. Hearing aids also may help.

Sensorineural loss. In sensorineural loss,



sound waves reach the inner ear, but are not properly transmitted to the brain. The reason is damage to the delicate nerve mechanisms of the inner ear caused by loss of hair cells in the inner ear (from aging, certain medications, prolonged noise, or a sudden, extremely loud noise), or a tumor on the auditory nerve.

The sensorineural hearing loss associated with aging is called *presbycusis*. Presbycusis makes it difficult to hear high-pitched sounds and words containing those sounds. The person generally hears low-pitched tones.

The vowels "a," "e," "i," "o," and "u" are low-pitched sounds; the consonants, such as "th," "s," "sh," "f," and "p" are high-pitched sounds that don't carry much acoustical power and are more difficult to hear. As a result, the person has difficulty discriminating between words and may make statements such as these:

- I hear, but I can't understand what you're saying.
- Everyone seems to mumble.

- I can't hear my grandchildren or the birds in the park. (These are high-pitched sounds).
- Voices sound like a static-filled radio broadcast.

To a person with presbycusis, 50 and 15 cents may sound the same. "Dead" may be heard when you say "bed"; "choose" instead of "juice"; "wash" for "watch"; "fill" for "pill"; or "pen" for "spent." Background noise further decreases the ability of the person to hear.

Presbycusis is nearly universal in later life. However, its onset and progression varies widely. The severity of presbycusis depends on several factors, including:

- Heredity
- Exposure to loud noises over time
- The condition of the person's circulatory system

Changes in hearing also can be caused by certain diseases, infections, and medications.

Most sensorineural losses can't be treated medically or surgically. But many people can be helped by a hearing aid.

Reactions to Hearing Loss

Most people lose hearing gradually. Because of this, many older people are not aware of the extent of their loss until family or friends bring it to their attention or they are shown test results. Some have difficulty admitting they have a hearing loss, particularly if they equate hearing loss with inadequacy.

Family members and friends sometimes fail to recognize a hearing loss. They may label the person as "senile," "confused," "cantankerous," or "stubborn." Or, they may imply that the person deliberately manipulates his or her hearing: "He hears only what he wants to hear." Sometimes personal relationships are damaged before a hearing loss is diagnosed.

Communication can be as much of a struggle for the speaker as for the person who is hearing-impaired. Consciously or unconsciously, conversations may be avoided.

Is Hearing Loss the Problem?

Answer these questions by checking the appropriate box:

Yes	No	
❑	❑	Do you turn up the television (radio, stereo) so loud that others complain?
❑	❑	Do you complain that other people mumble or don't speak clearly?
❑	❑	Do you frequently ask speakers to repeat what they said?
❑	❑	Do you have difficulty hearing high-pitched sounds (e.g. women's and children's voices, telephone dial tones, high notes of a violin, dripping of a faucet, ticking of a watch)?
❑	❑	Do you habitually turn your head to one side while listening?
❑	❑	Do you frequently misunderstand what is said?
❑	❑	Do you have trouble hearing in group situations?
❑	❑	Do you find it difficult to locate the source of sounds?
❑	❑	Do you give inappropriate answers to questions?
❑	❑	Do you find it difficult to distinguish words?
❑	❑	Do you have to look at people directly as they talk before you can understand them?
❑	❑	Do you experience ringing in the ears or other head noises?

If you answered "yes" to any of these questions, you may have a hearing loss. Get a medical evaluation. The earlier a hearing problem is detected, the quicker it can be corrected.

How to Help Someone Who Has Hearing Loss

Don't shout. Speaking in a normal tone of voice is preferable to shouting. When you raise your voice, sound becomes distorted and fuzzy, making it even more difficult for the person to hear. Shouting only accentuates the vowel sounds and obscures the consonants. Also, facial expressions often associated with shouting may be interpreted as anger.

Talk face to face. Speak at eye level. Often people develop lip reading skills to help fill gaps in information they cannot hear. Speak to the person at a distance of 3 to 6 feet. Make sure lighting is adequate so that your lip movements and facial expressions are clearly visible. Position yourself so that light is shining from above or toward you, not from behind you into the person's eyes. Never talk from another room.

Get the person's attention before speaking. Call the person by name to start a conversation or use touch to get the person's attention.

Eliminate or reduce background noise. Turn off radio and television. Even soft music, typewriter, air conditioner, dishwasher, or street noise can reduce the ability of a person to hear. These sounds also are amplified by a hearing aid. Pay attention to acoustical problems in rooms or other areas.

In a crowded room, the best spots for conversation are near soft, absorbent materials such as drapes or upholstered furniture. A high-backed chair, for example, helps shield the person from background noise. Hard surfaces (e.g. large windows or plaster walls) exaggerate background noise and may create echoes.

Speak distinctly. However, don't overexaggerate lip movements. This distorts the message and makes it harder for the person to "read" visual clues from your facial expression. Don't drop the volume of your voice at the end of a sentence.

Enhance your speech. Use facial expressions, gestures, and visual aids to illustrate your message. Write important information down as well as give it orally.

Give time to respond. It may take the person longer to absorb and understand what you have said. Therefore, allow longer pauses between sentences.

Try rewording a message. Don't repeat the same words if they are not understood. Using different words or different phrases may make it easier for the person to "hear" your message. Rephrase your statement into shorter, simpler statements.

Don't chew, smoke, or cover your mouth. Anything in front of your lips, including fingers or mustaches, are potential barriers to communication.

Don't speak directly into the person's ear. The person can't make use of visual clues and it tends to distort what you are saying. However, if the person has greater loss in one ear than in the other, direct your conversation to the "good" ear.

Be aware of false impressions. Head nodding doesn't necessarily mean "I understand."

Explore adaptive and assistive listening devices. In recent years, many devices have been developed to help hearing-impaired people. They include devices that can be attached to the television and radio that transmit sound directly to the ear; flashing lights on appliances, doorbells, and telephones; vibrating alarm clocks; and pocket size amplifiers and speakers.

Getting Medical Help

If you suspect a hearing loss, the first step should be a medical evaluation. Some ear conditions can be treated through surgery or medication. Consult with an ear specialist. An otologist or otolaryngologist specializes in diagnosing and treating diseases of the ear. The doctor may recommend an audiological examination if the hearing loss can't be corrected medically.

An audiological examination will determine the nature of a hearing loss and if a hearing aid can help and to what extent. This examination should be done by an audiologist, a

professional who specializes in the identification and non-medical treatment of hearing problems. Most audiologists also provide auditory training, teach speechreading, and help a person to develop skills to compensate for a hearing loss. An audiologist holds a master's or doctoral degree in audiology and is certified.

Hearing Aids

A hearing aid can help compensate for many hearing problems by increasing and controlling the intensity of sound or expanding the range of sounds heard. No single aid is suitable for all types of hearing loss. And, a hearing aid is not always the answer—it can't help some hearing losses.

Unlike new glasses, which often provide immediate improvement in vision, hearing aids require learning how to use them effectively. No matter how well designed and appropriate a hearing aid, its effectiveness depends on the wearer. Several factors can affect whether a person will be a successful hearing aid user, including:

- Motivation
- Attitude toward a hearing aid
- Self-image
- Poor eyesight
- Hand and finger dexterity

A hearing aid often enhances social participation and quality of life. However, adjusting to a hearing aid requires time, patience, and practice. All sounds are amplified, not only the sound of the human voice. Sounds that the person hasn't heard for a while—street noises, dishwashers, and chirping birds—may be distressing at first. This can be the reason a person may turn off or not wear the aid. The person needs to learn to filter out unwanted sounds.

Encourage the person to begin wearing a hearing aid for short periods of time (15 to 60 minutes) during a quiet time of the day and gradually increase the time over a month to 10 to 12 hours a day. This makes adjustment easier. Once adjusted to quiet situations, it's easier to gradually use the aid in difficult situations. Noisy situations, such as the dinner table when everyone is talking and pots and silverware are clanging, can be disturbing and make it difficult to learn to discriminate speech. Patience and practice will result in a hearing aid becoming a tool in facilitating communication.

It is important to take proper care of a hearing aid to ensure its effectiveness. Some older people neglect their hearing aids because of physical or mental impairments, and need assistance. If you help an older person with a hearing aid, know how to do these tasks:

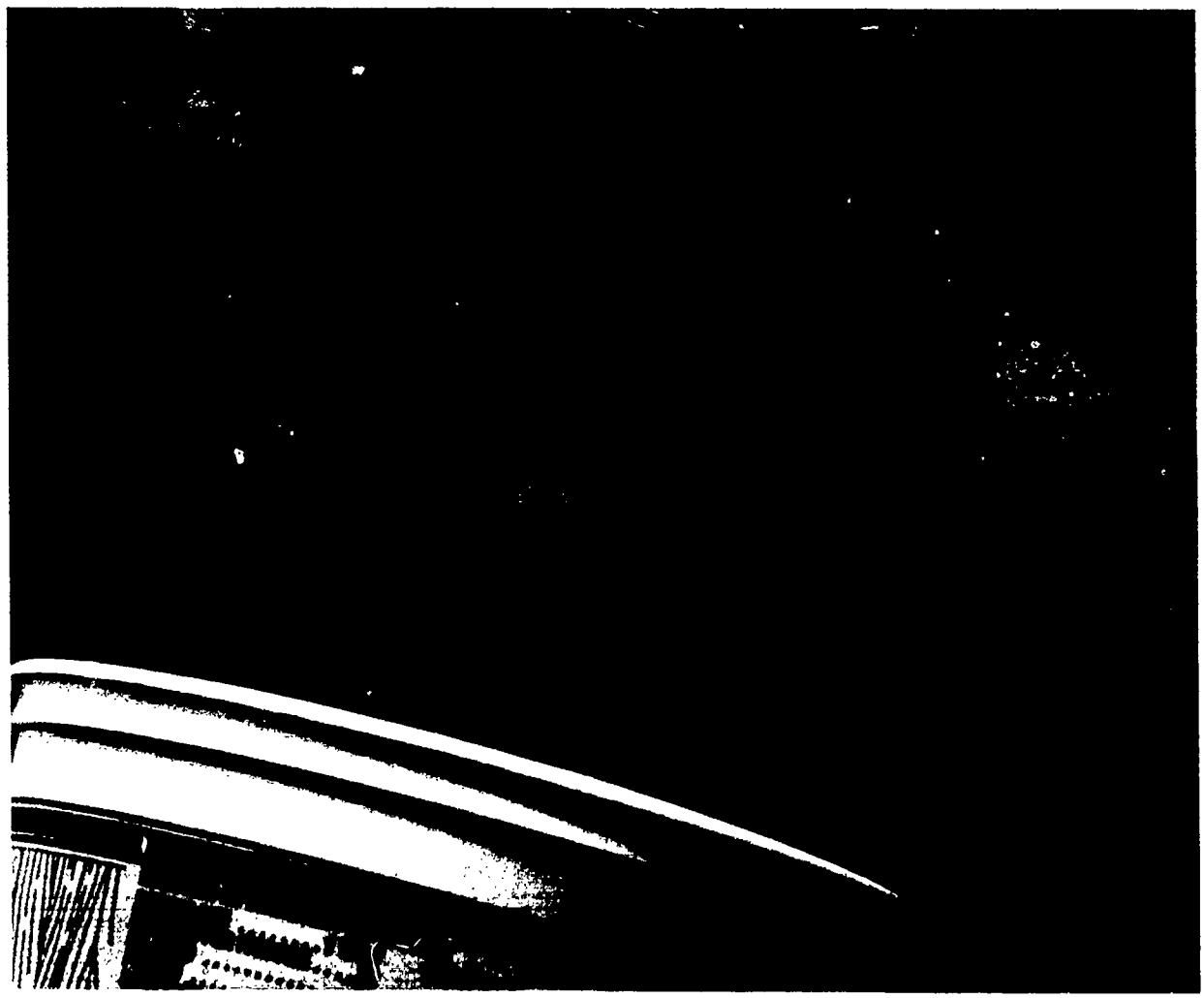
- Check battery strength, remove and replace batteries, and choose the correct battery for the hearing aid.
- Inspect the hearing aid for damage and when to replace the aid.
- Remove earwax from the receivers or earmolds without damaging the device.
- Care for and maintain a hearing aid.

TASTE AND SMELL

How to Help Someone Who Has a Taste or Smell Disorder

For people to maintain good nutrition, food must be appealing to their sense of taste and smell. However, with increasing age, decline in these senses can affect the pleasure and satisfaction older people obtain from food.

The number and sensitivity of the taste



buds decrease with age. After the age of 50, the ability to perceive each of the taste sensations—sweet, salty, bitter, and sour—declines, but not at the same rate. The decline appears greatest for salt sensitivity.

The sense of taste appears not to decline significantly as much from aging as from other factors—smoking, poor oral hygiene, dentures that rub on the tongue, and certain medical conditions. Diabetics are less able to detect certain flavors. Cancer changes or intensifies certain taste perceptions, causing abnormal taste sensation. Some medications decrease taste perception; others accentuate it.

Saliva, which is necessary for taste, decreases in later life. The taste of "sour" tends to stimulate saliva flow. This can be demonstrated by popping a lemon drop candy into your mouth. Some medications and radiation treatments to the head and neck also can decrease saliva.

Older people who experience changes in their ability to taste may complain, "Food just doesn't taste as good as it did when I was younger." or "Everything tastes flat." When food no longer tastes good, people can lose their interest in eating, which sometimes leads to malnutrition. Others will overeat in an attempt to achieve a favorable taste sensation. They may begin to use more salt, sugar, or spices to compensate for lack of taste.

Older people who have poor vision and have lost their taste sensitivity often find it difficult to identify foods. Food may have little appeal to them. Diet restrictions (bland or low-salt diets) can contribute further to food being unappealing. Poor health, low physical energy, not wanting to prepare a meal for just one person, and limited budgets also cause some older people to eat poorly.

Aging appears to affect the sense of smell more than the sense of taste. The sense of smell may be the earliest sensory system to decline, beginning as early as the late 30s or early 40s. After age 80, there is major impairment in the sense of smell. One major study showed that 60 percent of people in their 60s and 70s showed impairment and 25 percent could not identify odors. Eighty percent of the subjects over age 80 showed impairment; 50 percent had complete loss of the sense of smell. The exact mechanism for this decline is not known.

Factors other than age also affect ability to sense odors. These include excessive use of nose drops, certain diseases, allergies, head trauma, and some medications.

Changes in the ability to smell have important consequences for nutrition, safety, personal hygiene, and enjoyment of life. Without the sense of smell the world changes. The aroma of favorite foods lose their ability to entice. The aroma of an apple pie baking, the smell of coffee brewing, the fragrance of spring flowers, or the scent of the Christmas tree are gone.

Odors evoke our emotions. This is because our sense of smell is closely tied to the part of our brain most involved with memory and emotion. However, our reaction to an odor largely depends on our experiences with it and what we remember.

The sense of smell is largely responsible for producing the sensation of taste. Two-thirds of our taste sensations depend on our ability to smell. This is why when we have a bad cold and can't smell, food seems tasteless. Decreased ability to smell can cause poor appetite, resulting in nutritional deficiencies and weight loss.

It is often the odor that makes taste recognizable. Many foods have a bitter taste but pleasant odor. For people with impaired sense of smell, such foods often become objectionable. For example, if you don't smell the pleasant odor of green peppers, they taste bitter.

Loss of the ability to smell also affects safety. It is less likely the person will be able to detect warning odors—gas leak, smoke, or spoiled food. Smoke alarms and pilot lights can decrease the potential hazards that loss of smell creates, especially for older persons living alone.

The person may not be able to detect personal body or household odors, or pet wastes that are offensive to others. Perfume and cologne may be heavily applied and overpowering to other people.

How to Help Someone Who Has a Taste or Smell Disorder

Serve food attractively. Cues other than taste and smell are important to identifying and enjoying foods. We do "eat with our eyes." How food looks on the plate will often determine whether it is eaten. Vary foods in color, shape, texture, and temperature. For example, serving foods warm rather than cold enhances the aroma.

Put texture into food. Texture sometimes helps substitute for taste and smell. For example, instead of serving blended applesauce, serve the chunky style. Blended foods are the most difficult to "taste."

Make eating a social occasion. Conversation and socializing at mealtime usually encourages appetite.

Use smell-enhancing strategies. Let the aroma of pleasant foods permeate the environment. Increase the flavor of foods with flavor extracts or simulated odors. However, the addition of such odors will not be helpful to older adults who have completely lost their sense of smell. Foods with artificial odors also may be too strong for younger people.

Season food. Use flavorings, herbs, and spices to enhance the flavor of foods. Certain seasonings can give the sensation that a food tastes sweeter without adding sugar. For example:

- Adding or increasing vanilla or cinnamon in a recipe makes foods taste sweeter than they really are.
- Cardamon gives an aromatic, pungent, sweet flavor.
- Nutmeg has a sweet, warm, and spicy flavor.
- Mace is similar to nutmeg but more delicate.
- Ginger gives a hot, spicy, sweet flavor.
- Mint provides an aromatic sweet flavor with a cool aftertaste.
- Caraway, anise, and coriander have a sweet undertone.

There are many ways to add flavor without adding salt. Herbs and spices can provide a tasteful alternative and give food new zest. Try using one or more of these:

- Basil
- Bay leaf
- Celery
- Cumin
- Dill weed
- Garlic
- Marjoram
- Mint
- Nutmeg
- Oregano
- Paprika
- Rosemary
- Saffron
- Sage
- Savory
- Tarragon
- Thyme

Encourage good oral hygiene. Good mouth and dental care can improve taste perception.

Suggest chewing food thoroughly. Chewing breaks down food and allows more molecules to come in contact with taste and smell receptors.

Encourage the person to alternate bites of different food. Switching from food to food maximizes the amount of taste and flavor, and hence enjoyment, a person can get from eating. When several bites are taken of the same food, the flavor is strongest on the first bite and becomes less and less intense with each successive bite.

If a person needs assistance with feeding, don't mix foods together. Mixing makes it impossible for the person to separate flavors and makes food less appealing.

TOUCH

The sense of touch enables us to distinguish between objects, enjoy the touch of another person, and be aware of danger, for example from hot or sharp objects. Many of our daily activities rely on the sense of touch.

Touch sensitivity and the ability to detect pain decreases with age. Certain chronic diseases such as diabetes, circulation problems, stroke, Parkinson's disease, and arthritis can further affect a person's sense of touch.

Some older persons find it difficult to distinguish textures and objects on the basis of touch alone. Some may experience a delayed reaction to being touched.

Pain threshold increases with age. Certain medical problems and medications may further reduce sensitivity to pain. An older adult is more likely to suffer a severe burn or cut before noticing discomfort. He or she may not feel the hot temperature of bath water or a heating pad.

Compared to a younger person, an older person also is less likely to perceive internal body pain or a rising temperature. This may result in an illness or infection progressing to an advance stage before detection. This is particularly common and potentially dangerous in the older person who has diabetes. Because diabetes contributes to loss of nerve sensitivity and blood flow in the feet and legs, severe cuts and bruises may not be noticed and severe infection may result.

Precautions such as lowering the temperature setting of a hot water heater can reduce the likelihood of accidents due to decreased touch and pain sensitivity. Lowering the temperature to 120 degrees F is recommended.

The use of touch can be a powerful therapeutic tool. Yet, some older adults are touched very little or not at all and suffer from "touch hunger." Touch is a powerful means of communication. It can help reduce anxiety and provide comfort. When using touch, consider the person's background, culture, and sense of personal space.

YOUR ATTITUDE IS IMPORTANT

If you are experiencing age-related sensory changes, your attitude is important. Changing vision and hearing and other senses can be frustrating but with some determination and patience, you can learn to compensate for many of the sensory losses. Adaptive devices also help. Be willing to experiment to find ways to change your environment to improve your sensory ability. Tell people around you what they can do to help.

If you work with older people, keep in mind that personality, lifestyle, and relationships with family and friends affect their adjustment to sensory losses. Many people learn to compensate for their losses, while some may use their loss as a means of getting attention. Those who are proud—or afraid of losing their independence—may refuse help. Your attitude and response is a key to being an effective helper. Don't patronize the older person who has a sensory impairment. Try to enhance the person's feelings of adequacy and self-esteem.

FOR FURTHER READING

Extension Service Publications

The following publications are available from Agricultural Communications, Publications Orders, Oregon State University, Corvallis, OR 97331-2119. Please add 25¢ shipping and handling for orders up to $2.50. For orders between $2.50 and $100, add 15 percent shipping and handling. For orders of $100 or more, please call (503) 737-2513 for a price quote.

Aging Parents: Helping When Health Fails by V.L. Schmall and L. Isbell, Pacific Northwest Extension publication PNW 246, Oregon State University, Corvallis, 1987. 50¢

Alcohol Problems in Later Life by V.L. Schmall, C.L. Gobeli, and R.E. Stiehl, Pacific Northwest Extension publication PNW 342, Oregon State University, Corvallis, 1989. 75¢

Coping with Caregiving: How to Manage Stress When Caring for Elderly Relatives by V.L. Schmall and R. Stiehl, Pacific Northwest Extension publication PNW 315, Oregon State University, Corvallis, 1987. 75¢

Depression in Later Life by V.L. Schmall, L. Lawson, and R. Stiehl, Pacific Northwest Extension publication PNW 347, Oregon State University, Corvallis, 1990. $1.00

Families and Aging: A Guide to Legal Concerns by V.L. Schmall, T. Nay, and M. Weinstein. Oregon State University Extension Service Circular 1221, Corvallis, 1988. $1.25

Financing Health Care in Later Life by V.L. Schmall and R. Stiehl, Pacific Northwest Extension publication PNW 345, Oregon State University, Corvallis, 1989. $1.00

Helping Memory-Impaired Elders: A Guide for Caregivers by V.L. Schmall and M. Cleland, Pacific Northwest Extension publication PNW 314, Oregon State University, Corvallis, 1987. 50¢

Helping Your Older Family Member Handle Finances by V.L. Schmall and T. Nay. Pacific Northwest Extension publication PNW 344, Oregon State University, Corvallis, 1989. 50¢

Living Arrangements in Later Life by V.L. Schmall and R. Stiehl. Pacific Northwest Extension publication 318, Oregon State University, Corvallis, 1987. $1.00

Pacific Northwest Cooperative Extension bulletins are joint publications of the three Pacific Northwest states—Oregon, Washington, and Idaho. Similar crops, climate, and topography create a natural geographic unit that crosses state lines. Since 1949, the PNW program has published over 300 titles. Joint writing, editing, and production has prevented duplication of effort, broadened the availability of faculty specialists, and substantially reduced costs for the participating states.

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