

# Making Sense of Sensory Losses as We Age —

## Childhood, Adulthood, Elderhood?

**Dena Kemmet**, M.S., Extension Agent, NDSU Extension

**Sean Brotherson**, Ph.D., Extension Family Science Specialist, NDSU Extension

### Our Senses and the Aging Process

The process of aging begins at birth and continues throughout life. Change is an inevitable part of the aging process. **Sensation** is the physical and mental process that allows us to receive information from our surrounding environment through the ears, skin, tongue, nostrils, eyes and other specialized sense organs. Key sensing processes include vision, hearing, touch, taste and smell.

**Sensory loss** is defined as a decreased ability to respond to stimuli that affect our senses (hearing, touch, etc.). For example, vision loss might mean that we cannot see a person across the street wave at us, or hearing loss might result in us struggling to hear people speaking in a certain tone of voice. Sensory loss is inevitable, but that does not mean adults who are losing one or more of their senses have no options available to them.

Physical changes associated with aging, beyond gray hair and wrinkles, are not always visually noticeable, are constantly changing and can affect us in many ways.

Imagine not being able to see a beautiful sunset, hear your grandchildren playing or smell your favorite flowers. These losses affect people in different ways. The impact of these losses can lead to social isolation, loneliness and feelings of depression.

### Understanding Sensory Loss

Sensory changes do not occur at the same age for each person, nor do all changes occur for everyone or to the same degree. An awareness of different sensory changes and their effects can be helpful. Studies have shown changes accelerate at these approximate age ranges:

- **Vision** — mid-50s
- **Hearing** — mid-40s
- **Touch** — mid-50s
- **Taste** — mid-60s
- **Smell** — mid-70s

Let's make sense of the aging process by exploring the senses and ways we can make a difference.

Sensory loss seems to be an almost inevitable companion to growing old. Does that mean older adults who are losing one or more of their senses are simply out of luck? Not at all. Cures may not be available for the major causes of age-related sensory loss, but armed with the right knowledge about which age-related sensory losses are normal and which are not, we can better understand what to do about them.

Understanding sensory loss can help individuals adapt and accept these natural changes. Equally important is not accepting a change as a normal part of aging without first understanding the loss. A variety of resources that can help minimize the impact of sensory losses as we age often are available.

Alteration of the environment to compensate for age-related sensory losses is necessary for many older adults to maintain their independent living. Thorough knowledge of the changes in vision, taste, smell, touch and hearing that accompany the aging process is essential to assessing environmental alteration.

# NDSU

## EXTENSION

North Dakota State University  
Fargo, North Dakota

## Vision and Aging



As we age, the shape of the eye lens changes. The lens and cornea become less transparent, the pupil becomes smaller and the field of vision shrinks. Visual difficulties may come with these physical changes in the eye, such as the following:

- decreased ability to see objects clearly
- decreased ability to focus on objects at different distances
- decreased ability to function in low light levels
- decreased ability to distinguish certain color intensities
- decreased ability to correctly judge distances

Common types of vision loss include glaucoma, cataracts, macular degeneration and diabetic retinopathy.

A problem in many homes that affects vision is an improper amount of light. As we age, we need greater amounts of light. Studies show that a person who is 80 years old will need about three times more light than a young adult to read a book.

Color vision and contrast sensitivity also are affected by aging. The aging lens and cornea cause glare by light scattering, leading to poor vision quality, especially when the pupil dilates in the dark. In addition to larger print, providing color contrast between the print and the paper can help reduce the effort of reading.

As changes occur in vision, schedule a visit to your optometrist to secure the proper glasses for optimal vision. Make needed changes around your home to compensate for changes in vision. To maximize your visual capabilities in the home, increase the level of light by using a higher watt light bulb and evenly distribute or balance the light sources to eliminate glare. Finally, remember the value of getting regular eye checkups to assess your eye health.

## Hearing and Aging



Loss of hearing is very gradual, starting at middle age. The loss appears to be caused by a decrease in the elasticity of the eardrum.

Hearing loss often develops slowly and quietly. People may complain that they can hear the spoken sounds, but they can't understand what the speaker is saying. Words that are quite different can sound the same, such as tea/pea/key, shop/shot/shock or fine/shine/sign.

Impaired hearing affects more older adults than any other chronic condition. Although only 2% of people 55 and older are classified as legally deaf, 30% to 50% of older adults suffer a hearing loss serious enough to negatively affect the quality of communication and interpersonal relationships.

People have a decreased ability to hear high frequencies and sounds in general.

Sounds may be muffled and difficult to understand. Studies find that high-frequency sounds are filtered out or not heard. Therefore, asking individuals to speak louder may not make the message easier to understand.

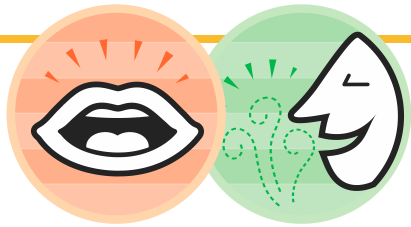
People with decreased ability to hear may deny or be embarrassed to talk about the problem. Hearing aids, while very beneficial, never can replace normal hearing.

Many background noises from radio, television, appliances, traffic or busy public gatherings all detract from hearing normal conversation. Other obstacles that may be treatable also could be playing a part in hearing loss.

To accommodate an individual with hearing loss, try to cut down on background noise. Turn off the television or radio during conversations. Ask for quiet sections in restaurants, and try to sit away from the door at theaters.

Begin now to make hearing health a part of your lifestyle. Stay away from loud or prolonged noises when you can. Turn down the music volume. Buy power tools that have sound controls. When you must be around noise, either at work or at play, use something to protect your hearing.

## Taste, Smell and Aging



Many people are not aware that an individual's sense of smell and their sense of taste are closely related. Sensory losses in taste and smell can lead to other health concerns for aging individuals.

At age 30, a person has 245 taste buds on each of the tiny elevations (called papilla) on the tongue. By age 70, the number of taste buds decreases to approximately 88. The sense of taste changes slowly.

Sweet and salty tastes seem to be the first affected. For older people, normal seasoning may seem bland. Use of herbs instead of salt may be one answer to increasing the flavor of foods without increasing sodium content, especially for older adults who have high blood pressure.

The lack of taste appeal may discourage the older adult from eating, which may indirectly lead to poor nutrition. One way to compensate for the loss of taste sometimes seen with illness and aging is to concentrate on contrasts in texture, temperature and flavor in preparing foods.

Smell also makes things enjoyable. Our "odor memories" frequently have strong emotional qualities and are associated with the good or bad experiences in which they occurred. Also, when eating a favorite food, the taste is much more flavorful when a person is feeling healthy, as opposed to being congested. Humans can recognize as many as 10,000 different scents, compared with the sense of taste, which is limited to four basic categories: sweet, salty, sour and bitter. The sense of smell is very important, but often taken for granted.

The sense of smell is not only important to taste, but it is also essential for detecting signs of danger, such as smoke, gas leaks and spoiled food. A person living with the loss of smell needs to take extra safety precautions. Smoke detectors are a necessity in all areas of the home, especially in the kitchen and near fireplaces. The sense of smell is equally important for identifying spoiled food. Because smell plays an important role in sense related to food quality, safety precautions in handling food are important for older adults. This particularly includes proper storage of food, refrigeration and other food safety guidelines.

## Touch and Aging



Touch is a wonderful and needed sense. As we age, the sense of touch decreases because the skin's sensitivity decreases. The skin becomes less taut and has a loss of elasticity. Tissue loss occurs immediately below the skin. These changes are attributed to changes in the amount of fat below the skin, as well as decreased numbers of nerve endings.

Touch is a necessary sense that alerts us to changes in temperature, movement or pain. We put on more clothes when we feel the temperature cool on our skin. We move a hand away when someone leans too heavily on it.

Loss of tissue and elasticity in skin cells means that older people may become less responsive to stimuli affecting our sense of touch. Because the skin loses sensitivity, an older adult may not experience pain until the skin has been damaged. The reduced fat can cause the body, particularly the extremities, to bruise or even tear for no apparent reason.

Reduced nerve endings can result in a person not noticing a cut, blister or other injury that can lead to infection.

The decreased sensitivity may affect a person's ability to distinguish different stimuli or may reduce their reaction time. For example, the older adult may have difficulty differentiating coins or buttons or have difficulties with fine dexterity, such as catching or picking up small objects. Other small motor skills, such as writing with a pen, also might be affected.

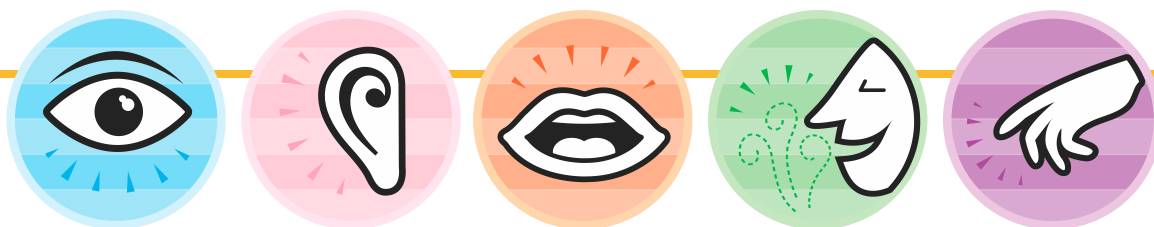
### Impacts of Sensory Loss

Sensory loss in any of the senses can be emotionally distressing and may affect everyday tasks, such as reading, moving about safely, doing housework and sharing conversation. While everyone is different, people with sensory loss may experience the following:

- Frustration
- Confusion
- Fear of becoming a burden
- Isolation
- Withdrawal
- Anxiety
- Fear of losing independence
- Depression

**The secret of genius is to carry the spirit of the child into old age, which means never losing your enthusiasm.**

- Aldous Huxley



## Coping With Sensory Loss

Most damage to senses is caused by environmental factors, much of which becomes apparent as people enter their 70s.

Although genetics is known to influence longevity and optimal aging, research suggests that good lifestyle choices, including regular exercise, diet and nutrition, have a significant impact on aging.

Although sensory loss such as losing sight or hearing can be challenging, a large number of products and equipment are available to help those experiencing sensory loss and assist them to live an independent lifestyle.

The challenges of life do not become easier as one ages. Fears, physical difficulties and various losses occur. They include sensory losses in the areas of vision, hearing, taste, smell and touch. However, individuals who are prepared and informed can cope successfully with these life changes.

Changing your lifestyle can help reduce the potential for sensory losses that commonly affect the aging. Gain power over your health by managing your lifestyle. Enjoy the benefits of increased activity and good nutrition, and delight in a longer, healthier life span.

Being optimistic, coping with a sensory loss and maintaining social contact can contribute to an improved quality of life.

Note that in spite of physical changes, most older people adjust quite well and are able to compensate for their sensory losses. Take steps to learn about sensory losses and do what you can to maintain health in each area of your physical well-being. A variety of skills, resources and support that can assist in maintaining sensory wellness is available to you.

## Resources for Coping with Sensory Loss

**National Association of Geriatric Education Centers** – [n-age.org/nagec](http://n-age.org/nagec)

**The American Geriatrics Society** – [www.americangeriatrics.org](http://www.americangeriatrics.org)

**North Dakota Adult and Aging Services** – [www.hhs.nd.gov/adults-and-aging](http://www.hhs.nd.gov/adults-and-aging)

**American Society on Aging** – [www.asaging.org](http://www.asaging.org)

**North Dakota Interagency Program for Assistive Technology** – <https://ndassistive.org/>

## References

- Boyce, J.M., and Shone, G.R. (2006). Effects of ageing on smell and taste. *Postgraduate Medical Journal*, 82(966), 239-241.
- Cavanaugh, J.C., and Blanchard-Fields, F. (2015). *Adult development and aging* (7th ed.). Connecticut: Cengage Learning.
- Hoyer, W.J., and Roodin, P.A. (2008). *Adult development and aging* (6th ed.). New York: McGraw-Hill.
- National Institute on Aging. (2009). *Smell and taste: Spice of life*. Silver Spring, Md.: National Institute on Aging, National Institutes of Health.
- National Institute on Deafness and Other Communication Disorders. (2013). *Age-related hearing loss*. NIH Pub. No. 14-4235. Bethesda, Md.: NIDCD Information Clearinghouse. Retrieved June 2, 2015, from <https://www.nidcd.nih.gov/health/age-related-hearing-loss>

The NDSU Extension Service does not endorse commercial products or companies even though reference may be made to tradenames, trademarks or service names.

**For more information on this and other topics, see [www.ndsu.edu/extension](http://www.ndsu.edu/extension)**

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost for Title IX/ADA Coordinator, Old Main 100, 701-231-7708, [ndsu.edu](mailto:eoaa@ndsu.edu). This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881. 1.2M-8-08, 500-6-15, web-9-21, web-9-25