

Staying Sharp

current advances
in brain research

Chronic Health Issues



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NRTA: AARP's Educator Community

NRTA (www.aarp.org/nrta) is AARP's educator community. Consistent with AARP's mission, NRTA is dedicated to enhancing the quality of life for all as we age, specifically through a focus on education and learning. NRTA works for positive social change in the field of education and provides members with valuable information, advocacy, and service initiatives related to learning and education. NRTA provides national leadership through its network of affiliated retired educators' associations in 50 states and 2,700 communities and through its national office at the AARP headquarters in Washington, D.C. The partnership with the Dana Alliance for Brain Initiatives, and the Staying Sharp initiative, recognizes and explores the intimate connection between the brain, human behavior, and the ability to continue to learn throughout life.

The Dana Alliance for Brain Initiatives

The Dana Alliance for Brain Initiatives (www.dana.org) is a nonprofit organization of more than 200 leading neuroscientists, including ten Nobel laureates. The Dana Alliance is committed to advancing public awareness about the progress and benefits of brain research and to disseminating information on the brain in an understandable and accessible fashion. Supported entirely by the Dana Foundation, the Dana Alliance does not fund research or make grants.

The Dana Foundation is a private philanthropic organization with principal interests in science, health, and education. The Foundation's current areas of emphasis are in immunology and neuroscience research, and in K-12 education, particularly the training of arts educators.

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If you are living with a chronic health condition, you're not alone. By some estimates, half of all Americans — 125 million people — suffer from at least one chronic condition. Almost one in four people live with more than one illness.

Chronic, by definition, means long-lasting or recurring. Examples of common chronic health conditions include arthritis, cancer, diabetes, Alzheimer's disease, depression, and heart disease. This pamphlet focuses on chronic brain-related disorders, but the general guidelines provided may apply to any chronic condition.

For more than one third of Americans — some 40 million people — chronic illness takes the form of a brain disorder. These disorders are most commonly the result of damage to brain tissues (such as in stroke or head injury) or progressive dysfunction and death of nerve cells (neurodegeneration, such as occurs in Alzheimer's and Parkinson's diseases). As we age, our brain becomes more vulnerable to many brain disorders.

In some chronic illnesses, physical signs begin gradually, and may not be noticeable for years. Symptoms may be mild or severe, frequent or infrequent, or they may not be evident at all on a day-to-day basis. Because so many factors affect the course of a chronic illness — including some within our control and some that we cannot control — it may be difficult to predict how we will feel from one day to the next.

An Unfamiliar Road

Living with a chronic illness is not unlike driving down an unfamiliar road: you're never quite certain what lies ahead of you. It's important to remember that even unfamiliar roads can be negotiated, and the same is true of chronic illness. There are maps that show you where you're going, guidebooks to help you know what to do along the way, and other people who have been down the road before you. Knowing what to expect and doing what you can to cope with whatever comes your way can help you negotiate the road ahead.

Taking Control

Living with a chronic condition can pose enormous challenges, physically, emotionally, and financially. But your illness doesn't have to control you. There are many ways to gain better control of your health and maintain the best quality of life possible, and many places to turn to for help (see Resources section at the end of this booklet).



Chronic illness may demand adjustments in many parts of your life, and learning to accept and cope with that fact is part of the process of managing your illness. Remember, you don't have to do it all at once: set achievable goals for yourself and take one step at a time.

Understand Your Illness

- Ask your doctor for information; he/she may be able to provide materials or recommend books, articles, or Web sites.
- Contact relevant organizations (see Resources, page 27) and ask about information, referrals, or support groups.
- Visit your local library or bookstore to research your condition.
- Learn what symptoms to expect, how to manage them, and what might cause them.
- Learn about new therapies or clinical trials, and ask your doctor if they might be right for you.



Join a Support Network

- Several small studies of people with metastatic breast cancer or melanoma showed an association between participation in support groups and longer life.
- Many patient organizations coordinate support networks; try to find one that deals with your condition.
- Support networks might meet in group sessions or over the Internet, and some programs can connect you with one or two other people with your condition who can provide more personalized support and advice.
- Learn how other people deal with common problems and what strategies they have found useful for managing symptoms and coping with lifestyle adjustments.

Get the Right Medical Care

- Seek out the right doctor for you, preferably someone who is experienced in dealing with your condition.
- Investigate whether you might be best served by a specialist, and understand which specialist is best for you (for example, a neurologist specializing in stroke may be more appropriate for managing stroke than a general neurologist).
- If you're seeing more than one doctor, be sure they all know what medication or other therapies the others have prescribed.
- Ask about specialized recovery programs, such as stroke rehabilitation to recover lost function or physical therapy to increase mobility or reduce pain.
- Be prepared for doctor visits: write down your questions and keep a health journal (see below) so you can answer the doctor's questions accurately.
- Follow the doctor's orders carefully, including how and when to take medications and what to do if you miss a dose.



Monitor Your Health

Use a health journal, booklet, or calendar devoted to medical notes and information to:

- Record symptoms, including when they occur, their severity, and what activities might be triggering them;

- Keep track of doctor visits and take notes about important comments or suggestions during a visit; and
- List your medications and any other therapies, and make note of any side effects.

Share any relevant information from your journal with your doctor.

Eat Properly and Exercise

- Ask your doctor if there is a special diet you should follow or foods that you should avoid.
- Maintain a healthy weight.
- Get treatment for dental problems (such as missing or loose teeth or gum disease) or gastrointestinal conditions (such as heartburn, constipation, diarrhea) that may interfere with eating.
- Report to your doctor any significant changes in appetite or eating habits, as they may signal another problem.
- Maintain activity levels as much as possible; talk to your doctor about specific exercises or physical therapy that might help you manage symptoms.



Mental Health

- Watch for signs of depression, which affects many people with chronic illnesses (see “Depression and Chronic Illnesses”).
- Talk with your doctor if you notice persistent significant changes in thinking, memory, and other mental abilities. These can be caused by some illnesses and medications.
- Exercise your mind. Regular mental activity — especially things that are intellectually challenging — can help keep the brain sharp as we age, experts say.

- Stay involved in activities that you enjoy, and stay socially connected. These are important predictors of good health.
- Manage stress. Chronic stress can damage nerve cells and increase forgetfulness.
- Ask a professional therapist or counselor to suggest coping skills and to help you deal with emotional and behavioral issues.

Adjust Your Lifestyle Accordingly

- Pace yourself, and try to stick to a fairly regular schedule.
- Take note of when you are overtired or overanxious, and try to modify your activities accordingly.
- Prioritize activities, and don't overextend yourself.
- Ask for help when help is needed; seek out support programs in your community if necessary.

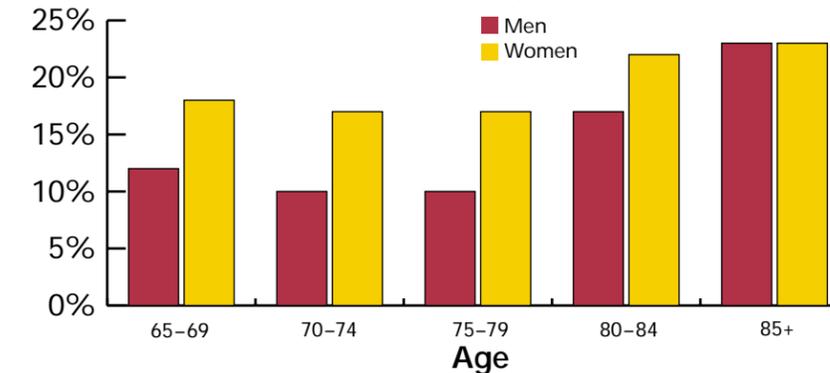
Sleep

- More than half of people over 65 report sleep problems, which can significantly affect quality of life, cause great distress, and impair memory, concentration, and alertness.
- Sleep problems may be a symptom of a medical or psychiatric disorder — most commonly depression — or may be side effects of medication.
- Talk to your doctor if you notice changes in your sleep pattern that persist for more than two weeks, such as difficulty falling asleep, waking up frequently during the night, or waking too early in the morning.

(For more information about sleep, please see Quality of Life, another brochure in the "Staying Sharp" series.)

Percentage of persons age 65 or older with severe depressive symptoms, by age group and sex, 1998

Adapted from: Health and Retirement Study



Note: Definition of severe depressive symptoms: Four or more symptoms out of a list of eight depressive symptoms from an abbreviated version of the Center of Epidemiologic Studies Depression Scale.

Depression and Chronic Illnesses

Studies suggest that at least one in four individuals who have a chronic illness also has depression. While it may seem natural to feel depressed and frustrated by persistent illness, depression is a serious medical condition that can be treated effectively in most people.

The chronic stress associated with prolonged health problems is believed to initiate changes in the brain's stress-response system that may set the stage for depression. People who have suffered a stroke or heart attack or have had heart surgery are particularly at risk.

Effective treatments are available to manage depression, including medications and psychotherapy, or "talk" therapy. Yet, for many reasons, some people never receive adequate care. Seniors may have different symptoms than other people with depression, and coexisting health conditions may further complicate recognition and treatment of depression. It is therefore important to consult with a doctor who has experience treating depression in the elderly, such as a geriatric psychiatrist.

Warning Signs of Depression

Depression is often compounded by other emotional, mental, and physical symptoms, which may range from mild to severe, and may wax and wane over time. If you notice any of these warning signs, and they interfere with normal day-to-day activities, talk with your doctor.

- Prolonged sadness or unexplained crying spells
- Significant changes in appetite and sleep patterns
- Irritability, anger, worry, agitation, anxiety, pessimism, indifference
- Loss of energy and enthusiasm, persistent
- Feelings of guilt, worthlessness, hopelessness, helplessness
- Inability to concentrate or make decisions
- Loss of enjoyment from once-pleasurable activities
- Withdrawal from social contacts, isolation
- Unexplained aches and pains
- Recurring thoughts of death or suicide
- Memory loss

Source: National Institute of Mental Health

(For more information about depression, please see Depression, another brochure in the "Staying Sharp" series.)

Chronic Pain

What It Is

More than 48 million Americans have chronic pain, which is distinguished from acute, temporary pain by its persistent or recurrent nature. Pain may be a component of many chronic health conditions, or its cause may be difficult to identify. Among the most common types of chronic pain are low back pain, bone and joint pain, headache or migraine, cancer-related pain, and pain from diseases that affect the muscles.

Scientists believe that chronic pain results when pain signals get switched "on" and don't shut off properly, which amplifies the signals and intensifies the pain.

What You Should Know

Pain is the body's way of telling us something is wrong; ignoring it or "toughing it out" is not a good idea. Persistent unrelieved pain appears to change the brain's "pain pathways," fueling a vicious cycle that makes us subsequently more sensitive to pain.

Even as better treatments become available, pain continues to be undertreated, especially among older adults, women, and minorities. Untreated pain can make other health problems worse, interfere with healing, and slow recovery from surgery or trauma. Striking at pain before it starts may be an effective control strategy: patients who receive pain medication before undergoing surgery may have less pain afterward and recover more quickly. Taking medication at set intervals, rather than waiting for pain to intensify before taking another dose, may also be beneficial for chronic pain.



One reason pain may be undertreated is that patients and doctors fear becoming addicted to strong painkillers such as morphine and other "opiates." However, research shows that these fears are unfounded: most people with chronic pain who take these medicines as prescribed do not become addicted. Those at risk for addiction tend to have a history of substance abuse or serious psychological problems.

As scientists achieve a better understanding of the biology of pain, new and more effective pain medications and approaches to pain control are becoming available. For example, personal “pumps” let patients administer pain medicine as they need it, and surgical procedures may be used to block pain pathways in the spinal cord.

What's New in Brain Research

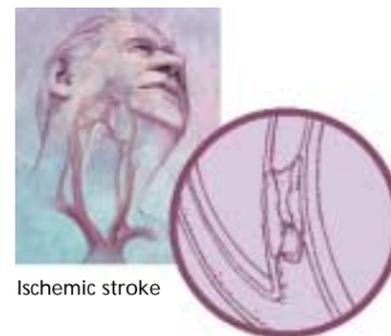
New understandings about the brain mechanisms that underlie chronic pain are leading to the development of a new class of pain relievers, called NMDA-antagonists. These “designer” drugs act selectively on NMDA receptors, a group of molecular gates on nerve cells that receive pain signals. Persistent pain causes changes in these receptors, which lead to the dramatically lowered pain threshold common to many chronic pain syndromes. NMDA-antagonists are built molecule by molecule to mirror the chemical structure of NMDAs.

They work by fooling the receptor into locking onto their “fake” signal rather than the actual pain signal, thereby blocking the real signal and interrupting the cascade of nerve cell changes that lead to chronic pain. At least that is the hope: several NMDA blockers are currently being tested in clinical trials to determine whether they are safe and effective.

Stroke

What It Is

A stroke, or “brain attack,” occurs when blood flow to the brain is interrupted, shutting off essential nutrients and oxygen that brain cells need to survive. There are two types of stroke: ischemic, which accounts for about three-quarters of strokes, and hemorrhagic.



Ischemic stroke

Within a few minutes of a stroke, brain cells start to die, which sets off a cascade of damage to nearby and interconnected cells. Swelling and toxins released by dying nerve cells may progressively broaden the area of damage.

Strokes can cause a number of changes in mental and physical functions, depending on where in the brain damage has occurred.



Hemorrhagic stroke

People who have “mini-strokes,” also called transient ischemic attacks (TIAs), are at greatly increased risk for suffering a major stroke. Treatment with blood thinners, such as aspirin or heparin, may reduce this risk.

Ischemic stroke

Results from a blockage or narrowing of a blood vessel due to plaque build-up or a blood clot. The carotid artery (the main vessel carrying blood to the brain) is most commonly affected.

Hemorrhagic stroke

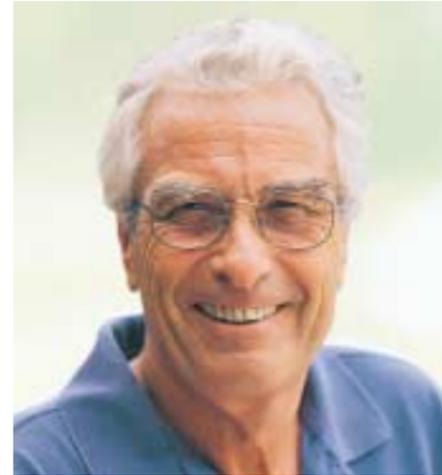
Subarachnoid hemorrhage occurs when an aneurysm (a weak spot in a blood vessel that fills with blood) bursts, causing bleeding on the outer edge of the brain. Intracerebral hemorrhage, which happens deep in the brain, results when blood leaks from a tear in a blood vessel.

What You Should Know

Stroke is a medical emergency; if you notice any of the warning signs of stroke (see below), get immediate medical attention.

For some people with ischemic stroke, a “clot-busting” drug called t-PA, can limit the secondary brain damage following a stroke, but only if it is administered within three hours of the stroke’s onset.

Many strokes can be prevented. Primary risk factors that can be managed with lifestyle modifications include smoking, excessive alcohol use, diabetes, high blood pressure, obesity, and inactivity.



There are hints that some people may inherit a vulnerability to stroke; having a relative who has a stroke puts you at greater risk.

Advances in our understanding of how the brain functions and repairs itself following injury have improved stroke recovery. A number of studies are investigating which rehabilitation strategies work best in which people. Beginning rehabilitation immediately seems to be critical to helping stroke victims recover lost function.

Warning Signs of Stroke

Any of these symptoms could indicate a stroke, which demands immediate medical attention.

- Sudden numbness, weakness or paralysis in the face, arm, or leg (often on one side of the body)
- Sudden difficulty talking or understanding speech
- Sudden confusion
- Dizziness
- Vision disturbances
- Severe, unexplained headaches

Source: National Stroke Association

What's New in Brain Research

Brain science has revealed that stroke and depression are closely linked. One large study funded by the National Institutes of Health found that people with depression are far

more likely to suffer a stroke: high levels of depressive symptoms increased stroke risk by 73 percent, while moderate symptoms raised the risk by 25 percent.

Other studies show that at least two-thirds of stroke victims develop depression. People who have strokes in the left front part of the brain seem to be at increased risk, for reasons that are not yet clear. Post-stroke depression can severely interfere with recovery, and triples the risk of dying in the years immediately following a stroke.

Despite its prevalence, depression following stroke is not often recognized or properly treated. The belief that depression is a normal reaction to suffering a stroke can prevent people from getting help. Conventional antidepressants, especially those that act on the brain chemical serotonin, can greatly improve symptoms of post-stroke depression. Many experts believe that treating depression symptoms will speed stroke recovery, and studies are underway to determine which therapies are best.



Neurodegenerative Diseases

Neurodegenerative diseases are characterized by progressive deterioration of nerve cells (neurodegeneration) in areas of the brain controlling movement and muscle function. Neurodegenerative diseases include Amyotrophic Lateral Sclerosis (also known as Lou Gehrig's disease), Huntington's disease, and Parkinson's disease.

Amyotrophic Lateral Sclerosis (ALS)

What It Is

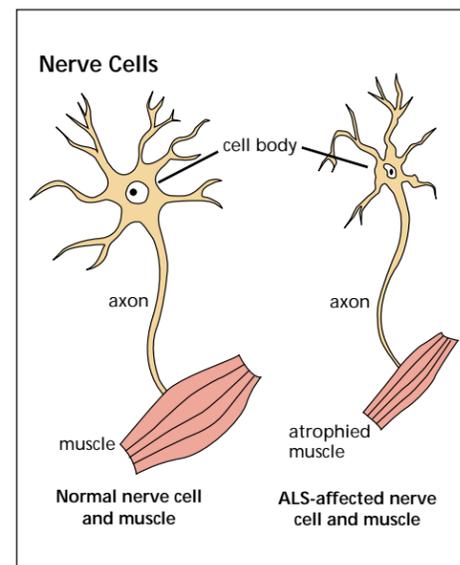
ALS, or Lou Gehrig's disease is a rare condition where nerve cell death in parts of the brain that initiate and coordinate muscle movement leads to the loss of these functions.

Early symptoms of ALS include progressive muscle weakness, usually involving the arms, legs, and muscles that control speech, swallowing, and breathing. Over time, the muscles atrophy, or waste away, making arms and legs thinner and weaker.

In later stages of the disease, people with ALS become paralyzed from the lack of muscle control.

What You Should Know

While there is so far no cure or treatment that stops or reverses the nerve cell damage underlying ALS, one drug therapy is available that modestly slows ALS progression in some people. Other promising treatments are being developed, some of which are currently being tested in clinical trials.



Muscle pain may accompany ALS as a result of the inability to move. Pain medications and physical therapy can help.

Anxiety and depression are common in people with ALS, and can make it difficult to manage symptoms. Medication, counseling, and involvement in support groups for people with ALS may help ease these mental effects.

Huntington's Disease

What It Is

Huntington's disease (HD) is a rare inherited condition that causes involuntary movements, severe emotional disturbances, and decline in mental ("cognitive") functions.

Early signs of Huntington's vary greatly, but may include:

- uncontrolled movements in the fingers, feet, face, or trunk, which may intensify when the person is anxious;
- changes in judgment and memory, such as difficulty learning new things, remembering facts, answering a question, or making a decision;
- mood swings, increased irritability, apathy, passivity, depression, or anger;
- trouble driving; or
- changes in handwriting.

As the disease progresses, stumbling or lack of coordination may be noticed, and intellectual tasks become increasingly difficult.



What You Should Know

The most common form of Huntington's disease often begins in middle age, but there are also late-onset and early-onset forms. In general, the earlier in life symptoms appear, the more rapidly the disease progresses.

The gene for Huntington's disease has been discovered, making it possible to confirm a diagnosis of HD with a genetic test.

There is currently no treatment that stops or reverses the course of HD, so treatment for the disease is aimed at managing movement and emotional problems.

Maintaining as much physical activity as possible can help people with HD feel better physically and mentally.

HD may cause swallowing problems that make it difficult to eat or drink, so it's important to pay close attention to nutritional needs and fluid intake.



Parkinson's Disease (PD)

What It Is

Parkinson's Disease is a movement disorder that results when brain cells that produce the neurotransmitter dopamine progressively die, creating a shortage of this important chemical in the brain.

The first symptom of PD is often tremor (trembling and shaking) in an arm or leg, especially when at rest.

Other common symptoms include slow movement, an inability to move, stiff limbs, a shuffling gait, and a stooped posture.

In some cases, people with PD may not show their usual facial expressions, or may speak in a soft voice.

What You Should Know

The cause of PD is not clear. Some people may inherit a genetic vulnerability, but the disease's onset is believed to depend on environmental factors as well.

There is no test that clearly identifies PD in a person, so diagnosis requires a careful evaluation of symptoms, including what and how severe they are and when they started. A neurologist with experience with the disease may be best suited to diagnose PD.

There is no cure for PD, but many patients may not require treatment for several years. When symptoms become severe, drugs that help replace dopamine may be used.

Other approaches to treating severe PD include a pallidotomy, a type of brain surgery that can effectively reduce symptoms in many people, and deep-brain stimulation, in which a pacemaker-like device is implanted into the brain to reduce tremors.



What's New in Brain Research

Gene therapy, in which the brain's own systems for cell growth are harnessed to combat brain illnesses, is a promising area of brain research. The idea is to introduce into people genes that can compensate for functions lost through disease or injury. There is hope that this approach may be used to treat many movement disorders and other neurodegenerative diseases marked by progressive loss of nerve cells in certain brain regions.

Gene therapy has already been used with some success in animal models of PD to help restore lost dopamine-producing cells. Researchers used a "dead" virus to deliver into brain tissue a gene for a specific nerve growth factor, a class of naturally occurring proteins that help maintain the health of brain cells. In animals, the therapy has helped keep nerve cells alive. This type of treatment is now being investigated in people, but experts point out that it is still far from perfect, and much more research is necessary to refine the approach to make it safer and more effective. Still, many scientists believe these early experiments in PD will open the door to much wider use of gene therapy, including its use in Huntington's disease and ALS.

Hearing Loss

What It Is

Hearing loss affects 38 million Americans; almost two-thirds of people affected are over the age of 55.

There are many possible causes of hearing loss, including trauma, repeated exposure to loud noises, side effects of medications, inherited abnormalities, and certain viral or bacterial infections, but the most common cause is simply getting older.

Having Trouble Hearing?

Take this simple self-test to see if you might have impaired hearing. Consult a doctor if your answers indicate a possible problem.

- Do you have to turn the volume up on the television?
- Do you frequently have to ask others to repeat themselves?
- Do you have difficulty understanding people when you are in groups or noisy situations?
- Do you have to sit up front in meetings or church in order to understand?
- Do you have difficulty understanding women or young children?
- Do you have trouble knowing where sounds are coming from?
- Are you unable to understand when someone talks to you from another room?
- Have others told you that you don't seem to hear them?
- Do you avoid family meetings or social situations because you "can't understand"?
- Do you have ringing or other noises (tinnitus) in your ears?

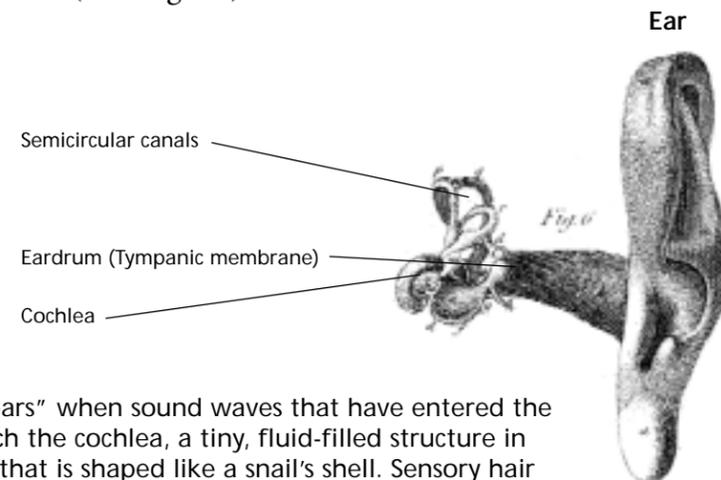
Scoring:

If you answered "yes" to:	You may have:
Fewer than three of the questions	no significant hearing loss
Three to five of any of the questions	a slight hearing problem*
Five to seven of any of the questions	a moderate hearing problem*
More than seven of any of the questions	a significant hearing problem*

**In order to determine the exact degree of hearing loss present, you should have your hearing evaluated by a licensed hearing professional.*

Source: Self-Help for Hard-of-Hearing People

Age-related hearing loss (also called presbycusis) may itself have a number of causes, including an inherited vulnerability, natural aging processes that affect hearing, or the cumulative effect of a lifetime's exposure to noise (see diagram).



The brain "hears" when sound waves that have entered the outer ear reach the cochlea, a tiny, fluid-filled structure in the inner ear that is shaped like a snail's shell. Sensory hair cells in the cochlea in turn translate the sound waves into nerve signals, and pass the signals along to the hearing center of the brain. As we age, some of the hair cells in the cochlea become damaged or lost, causing impaired hearing.

Impaired hearing can have a negative impact on quality of life: it may restrict your ability to interact with other people and make you more dependent upon others. It can also pose a safety risk by making it difficult to identify hazards in one's environment.

What You Should Know

The onset of hearing loss may be very gradual, sometimes occurring over a 25- to 30-year period, or it may be more rapid, such as if work or hobbies involve repeated exposure to loud noises.

Many people with hearing loss are not aware of it until someone else brings it to their attention.



The self-test in this section can help you determine if you might have a hearing problem that requires medical attention.

Most people with hearing loss can be helped to hear better with properly selected and fitted hearing aids. There are many different types of hearing aids, which vary by size, where they are placed in the ear, and how they process sounds, so it's important to find the right one for you.

What's New in Brain Research

A "cure" for age-related hearing loss would affect millions of people. By better understanding how the brain hears and what goes wrong when hearing is impaired, scientists hope to put these findings to use in developing effective therapies that may delay, prevent, or even reverse hearing loss. Already, several genes have been identified that play essential roles in the production and function of sensory hair cells. Scientists are now investigating ways to use these genes to stimulate the regrowth of hair cells damaged by age-related processes,

which many experts believe may be the key to reversing hearing loss. Animal studies are currently being conducted to determine how feasible this approach is, and whether it may hold promise for people.

Vision Loss

What It Is

One in six adults age 45 and older is affected by some type of vision problem, and the risk for vision loss increases with age.

Normal changes in the aging eye may include losing focus, especially having difficulty focusing on near tasks; trouble driving at night; and difficulty reading or doing detailed work in low light. The most common causes of vision loss in older adults are age-related macular degeneration, glaucoma, and cataracts (see below), but problems may be caused by a number of things, including:

Warning Signs of Vision Loss

- Squinting, tilting your head, or moving closer to focus while reading, watching television, or driving
- Trouble recognizing faces or objects
- Problems finding things in familiar environments
- Hesitation in reaching for objects
- Poor color combinations or difficulty recognizing colors
- Trouble writing
- Needing more light to read or do other tasks
- Bumping into things
- Difficulty climbing stairs or a tendency to stumble when walking, especially if the ability to walk is not impaired in any other way

Adapted from: American Society on Aging

- eye infections;
- inherited abnormalities such as retinitis pigmentosa;
- damage to the retina (a thin tissue lining the back of the eye) due to disease processes, such as diabetes;
- damage to the vision area of the brain due to stroke, head injury, or a brain tumor;
- vitamin deficiencies;
- “lazy eye” (a condition in which the muscles in one eye become weakened), or
- side effects of certain medications.

Common Eye Disorders

Age-related macular degeneration (ARMD)

The leading cause of blindness in mature adults, gradually destroys sharp, central vision (what we see when we look straight ahead). (See image at right.) Older people, especially women, whites, people with a family history of ARMD, and people who smoke are at increased risk.

Glaucoma

A disease characterized by elevated fluid pressure inside the eye socket. If not controlled, the increased pressure may cause shrinkage in the optic nerve, the primary nerve running from the eye to the brain’s vision area, and loss of peripheral vision (at right).

Cataract

A clouding of the eye’s lens, which lies behind the central pupil and colored iris. As we age, protein that makes up the lens may clump together and start to cloud a small area of the lens. The cataract may grow larger over time, progressively blurring vision (at right).



Normal



Macular Degeneration



Glaucoma



Cataract



What You Should Know

Vision correction with appropriately selected glasses or contact lenses can help most people with vision problems see better. As we age, we may need to have our prescription for glasses updated, because vision may get worse with age.

Most common forms of vision loss, glaucoma and cataracts can be treated with medications or surgery, and some damage (such as that from glaucoma) may be preventable with appropriate treatment.

There is some evidence that some types of vision loss may be prevented or minimized with lifestyle changes such as:

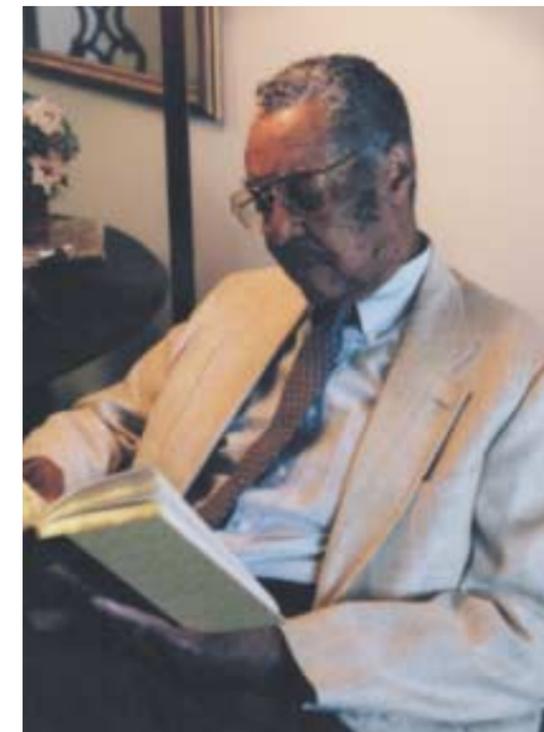
- eating a balanced diet rich in vitamins and minerals;
- exercising regularly;
- quitting smoking;
- wearing UV-rated sunglasses to protect your eyes from damaging ultraviolet rays; and

- wearing eye protection when playing sports or working with certain tools.

If you notice any of the warning signs of vision loss (see previous page), consult an ophthalmologist or optometrist to have your vision checked.

What's New in Brain Research

Scientists have discovered a gene that seems to account for about one-sixth of all cases of age-related macular degeneration (ARMD). Normally, the gene's purpose is to produce a protein that helps build critical components of the eye's retina, the tissue lining the back of the eye. In mutant forms, the gene leads to changes that set the stage for ARMD in later years. By unraveling the processes that go wrong when the gene mutates, scientists are one step closer to developing tools that will help identify people at risk for ARMD. Ultimately, the hope is that therapies might be developed that interrupt the abnormal processes in order to treat or prevent the condition.



Conclusion

Half of all Americans live with at least one chronic health condition, even as the rate of disability among older adults is dropping.

Recognizing that you may have a chronic illness is the first step in getting the help you need. Understanding the “what, when, why, and how” of your illness can go a long way toward helping you learn how to cope, manage symptoms as best you can, and make appropriate lifestyle adjustments. All of these steps will help put you in the driver’s seat so that you can take charge of your condition and regain control over your life.

Resources

AARP

Tel: (888) OUR-AARP (888-687-2277) toll-free
www.aarp.org

American Chronic Pain Association

Tel: (916) 632-0922; Fax: (916) 632-3208
www.theacpa.org

American Parkinson Disease Association

Tel: (888) 400-2732
www.apdaparkinson.com

Better Hearing Institute

Tel: (800) 327-9355; Fax: (703) 684-3393
www.betterhearing.org

Family Caregiver Alliance

Tel: (415) 434-3388; Fax: (415) 434-3508
www.caregiver.org

Huntington’s Disease Society of America

Tel: (800) 345-4372; Fax: (212) 239-3430
www.hdsa.org

Lighthouse International

Tel: (800) 829-0500; TTY: (212) 821-9200;
 Fax: (212) 821-9707
www.lighthouse.org

National Chronic Pain Outreach Association

Tel: (540) 862-9437; Fax: (540) 862-9485

National Council on Aging

Tel: (202) 479-1200; Fax: (202) 479-0735
www.ncoa.org

National Eye Institute

Tel: (301) 496-5248
www.nei.nih.gov

National Headache Foundation

Tel: (888) 643-5552; Fax: (773) 525-7357
www.headaches.org

NIH/National Heart, Lung and Blood Institute

Tel: (301) 496-4236
www.nhlbi.nih.gov

National Institute on Aging

Tel: (301) 496-1752
www.nih.gov/nia

National Institute of Neurological Disorders and Stroke

Tel: (800) 352-9424, (301) 496-5751
www.ninds.nih.gov

Resources (con't.)

National Stroke Association
Tel: (800) 787-6537; Fax: (303) 649-1328
www.stroke.org

Parkinson's Disease Foundation
Tel: (800) 457-6676; Fax: (212) 923-4778
www.pdf.org

Parkinson's Institute
Tel: (800) 786-2958; Fax: (408) 734-8522
www.parkinsonsinstitute.org

Prevent Blindness America
Tel: (800) 331-2020; Fax: (847) 843-8458
www.preventblindness.org

Self Help for Hard of Hearing People
Tel: (301) 657-2248; TTY: (301) 657-2249;
Fax: (301) 913-9413
www.shhh.org

The ALS Association
Tel: (800) 782-4747; Fax: (818) 880-9006
www.alsa.org

Well Spouse Foundation
Tel: (800) 838-0879; Fax: (212) 685-8676
www.wellspouse.org

The Dana Foundation
www.dana.org

NRTA: AARP's Educator Community

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