

Age-Related Memory Loss:

RECOGNIZING, REDUCING AND PREVENTING SYMPTOMS



For most people, memory lapses are a normal part of aging, not a warning of serious impairment. There are many ways you can improve your cognitive skills and keep memory loss from disrupting your daily life.

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Many of us, when we reach a certain age, get a little nervous when we misplace our keys or forget a phone number we've dialed a hundred times. But lapses in memory and slowing of mental responses are a normal part of the aging process for many people, not an ominous sign of mental deterioration.

Let's start with good news:

- Not all forgetfulness, even dementia, is caused by Alzheimer's disease.
- Not all memory impairment among seniors reaches the severity of dementia.
- What looks like significant memory loss can be caused by treatable, even reversible conditions.
- Significant memory loss is not an inevitable result of aging.
- The brain is capable of producing new brain cells at any age.
- Brain training and new learning can occur at any age.
- To a large extent, maintaining healthy memory is under your control.

How aging normally affects memory

Memory isn't a single cognitive process, and it isn't stored in a single area of the brain. It's classified by time (short-term vs. long-term) and by type (information you have to recall, like the 13 original colonies or a party you attended, and information that becomes part of you, such as how to drive a car or get dressed). Because different areas of the brain govern different activities and sensory functions, the nature of the information you want to remember determines what part of your brain takes it in and stores it.

There are three stages in the process of memory formation and maintenance:

Acquisition	New information enters your brain along pathways between neurons (nerve cells) in the appropriate area of the brain. Unless you focus on the information intently, its residence in your brain is fleeting — the old “in one ear, out the other” phenomenon.
Consolidation	If you've paid attention well enough to encode new information in your brain, the relevant neuronal pathways get a signal from the hippocampus , a primitive structure deep inside the brain, to store the information as long-term memory. This happens more easily if it's related to something you already know, or if it stimulates an emotional response.
Retrieval	When you need to recall information, your brain has to activate the same pattern of nerve cells it used to store it. The more frequently you need the information, the easier it is to retrieve it along healthy nerve cell connections.

For more information, see the section [What is memory?](#) in [Helpguide's Improving Your Memory: Tips and Techniques for Memory Enhancement](#).

Several factors cause aging brains to experience changes in the ability to retain and retrieve memories:

- The hippocampus is especially vulnerable to age-related deterioration, and that can affect how well you retain information.
- There's a relative loss of neurons with age, which can affect the activity of brain chemicals called neurotransmitters and their receptors.
- An older person often experiences decreased blood flow to the brain and processes nutrients that enhance brain activity less efficiently than a younger person.

These physiological changes can cause glitches in brain functions you've always taken for granted. You might have trouble remembering details of a movie you saw recently or directions to a new restaurant. It might take you longer to recall names, faces, and locations, even if you've seen them before. You might get flustered if you have to pay attention to more than one thing at a time.

Keep in mind, though, that much of what seems like forgetfulness is more of a *slowing* in the ability to absorb, store, and retrieve new information, not a loss. You can make and recall new long-term memories; the process just takes a little longer.

And many brain functions are largely unaffected by normal aging, such as:

- How to do the things you've always done and do often
- The wisdom and knowledge you've acquired from life experience
- Your innate common sense
- The ability to form reasonable arguments and judgments
- The ability to learn new skills and make them routine (though it might take longer)

Degrees of memory loss as part of aging

Normal forgetfulness

The following types of memory lapses are normal among older adults and generally are *not* considered warning signs of dementia:

- forgetting where you left things you use regularly, such as glasses or keys
- forgetting names of acquaintances or figures in the news
- occasionally forgetting an appointment
- having trouble remembering what you just read

- walking into a room and forgetting why you entered
- forgetting the details of conversations
- becoming easily distracted
- not quite being able to retrieve information you have “on the tip of your tongue”
- blocking one memory with a similar one, such as calling a grandson by your son’s name

Although most people start to experience memory lapses like these by age 60, they have little impact on daily performance. Later, we’ll look at some ways of improving memory and compensating for memory loss.

Mild cognitive impairment

When the information you forget is no longer trivial and your forgetfulness begins to have consequences — you miss your weekly card game or blank on your daughter’s birthday — your memory loss is beyond that of “normal” memory loss due to aging and may be diagnosed as *mild cognitive impairment* (MCI). The hallmarks of MCI are being unable to remember details of something you saw or read just a few minutes ago and trouble pulling up information you’ve known for a long time.

The memory lapses are similar to those of someone in the earliest stage of Alzheimer’s, and some experts see it as a precursor to Alzheimer’s or other forms of dementia. People with MCI do develop Alzheimer’s at higher rates than the general population of older adults. But MCI is not the same as Alzheimer’s, nor does everyone with MCI develop Alzheimer’s. Its symptoms stop well short of dementia, and people with MCI manage to accomplish their routine tasks independently, though they may struggle to do so.

Alzheimer's disease and other forms of dementia

When memory loss becomes so pervasive and severe that it disrupts your work, hobbies, social activities, and family relationships, you may be experiencing the warning signs of Alzheimer’s disease, another disorder that causes dementia, a condition that mimics dementia.

Helpguide’s article [Alzheimer’s and Other Dementias: Understanding the Differences](#), along with other pages in its series on Alzheimer’s and dementia, explains the different forms of dementia, what causes them, and how they are diagnosed.

Conditions and lifestyle factors that can cause memory loss

The conditions below might cause memory loss or produce dementia-like symptoms, but they are treatable. Be aware of ways that your environment and lifestyle might be contributing to your memory loss.

Factors which might cause memory loss or dementia-like symptoms:	
Exposure to environmental toxins	Substances you come in contact with in your home and workplace can cause memory loss or inability to concentrate. They include: <ul style="list-style-type: none"> ■ lead in drinking water or paint in older homes ■ mercury in paints, dyes and inks ■ carbon monoxide leaking from home heaters ■ chemicals in pesticides and hobby materials
Medications	Many prescribed and over-the-counter drugs or combinations of drugs can interfere with neurotransmitters essential to memory or simply make you drowsy.
Alcohol and drug abuse	Excessive alcohol intake is toxic to brain cells, and illicit drugs such as marijuana, ecstasy, and cocaine block the function of neurotransmitters needed for memory.
Depression	Especially in the elderly, persistent depression may actually cause a loss of neurons in brain areas responsible for memory, making depressed people less able to concentrate and process information.

Vitamin B12 deficiency	B12 protects neurons, and some older persons develop an inability to absorb it effectively.
Thyroid problems	The thyroid gland controls metabolism: if your metabolism is too fast, you may feel confused, and if it's too slow, you can feel sluggish and depressed.
Hearing loss	If you can't hear what people are saying, you can't remember it!

When to see a doctor

It's time to consult a doctor when memory lapses become frequent enough or sufficiently noticeable to concern you or a family member. If you get to that point, make an appointment to talk with your primary physician and have a thorough physical examination. The doctor will ask you a lot of questions about your memory, including

- how long you or others have noticed a problem with your memory
- what kinds of things have been difficult to remember
- whether the difficulty came on gradually or suddenly
- if you're having trouble doing ordinary things.

The doctor also will want to know what medications you're taking, how you've been eating and sleeping, whether you've been depressed or stressed lately, and other questions about what's been happening in your life. Chances are the doctor will ask you or your partner to keep track of your symptoms and check back in a few months.

If your memory problem needs more evaluation, your doctor may send you to a neuropsychologist, who will have you take some pencil-and-paper tests that gauge different aspects of mental ability. If those tests show abnormal results, the doctor will try to rule out causes of cognitive dysfunction based on conditions such as vascular disease, psychological problems, eating and drinking habits, and environmental factors.

A problematic showing on mental ability tests means you'll probably go in for imaging studies of the brain, such as a CT or MRI scan, which can detect anything putting pressure on your brain, and, if that's normal, a SPECT or PET scan, which track blood flow and metabolic activity in the brain, respectively, and are the most sensitive tools at present for revealing brain abnormalities.

If you are diagnosed with mild cognitive impairment or early Alzheimer's disease, you may benefit from one of the medications which work by protecting acetylcholine, a brain chemical that facilitates memory and learning.

Compensating for memory loss

Even if you are experiencing a troublesome level of memory loss, there are many things you can do to learn new information and retain it.

Keeping track of dates, schedules, tasks, phone numbers	<p>Write it down!</p> <ul style="list-style-type: none"> ■ Leave yourself notes or make checklists. ■ Put appointments and important dates on calendars and in a day planner or electronic organizer. ■ Ditto for phone numbers and other contact information. ■ If you have trouble remembering how to do something, write down the steps.
Remembering where you put things	<ul style="list-style-type: none"> ■ Put the things you use regularly (keys, glasses, purse, watch) in the same spot when you're not using them. ■ If you have to put something down in a different place, look at the place when you put down the object and say the location out loud.

Staying on top of times and places	<ul style="list-style-type: none"> ■ If necessary, write down where things are. ■ Set an alarm clock or timer to remind you when to leave for an appointment or do something in your home. ■ Use a map to help you get from one place to another. ■ Enlist friends and relatives to remind you of where you need to be and things you're supposed to do.
Learning new information	<p>Work on your ability to focus your attention and screen out distractions:</p> <ul style="list-style-type: none"> ■ Listen closely when someone talks to you. ■ Repeat back the information. ■ Try to talk with people in quiet places. ■ Focus on one thing at a time.

Preventing memory loss

The same practices that contribute to healthy aging also contribute to healthy memory.

Regular exercise	<ul style="list-style-type: none"> ■ It gets more oxygen to your brain. ■ It reduces the risk for disorders that lead to memory loss, such as diabetes and cardiovascular disease. ■ It may enhance the effects of helpful brain chemicals and protect brain cells.
Healthy diet featuring fruits, vegetables, whole grains, and “healthy” fats	<ul style="list-style-type: none"> ■ Antioxidants literally keep your brain cells from “rusting.” ■ B vitamins protect neurons and help reduce risk of cardiovascular diseases. ■ Avoiding saturated fats and trans fats helps cholesterol levels and reduces risk of stroke.
Managing stress	<ul style="list-style-type: none"> ■ Cortisol, the stress hormone, can damage the hippocampus if stress is unrelieved. ■ Stress makes it difficult to concentrate.
Good sleep and enough of it	<ul style="list-style-type: none"> ■ Sleep is necessary for memory consolidation. ■ Sleep disorders like insomnia and sleep apnea leave you tired and unable to concentrate during the day.
Not smoking	<ul style="list-style-type: none"> ■ Smoking heightens the risk of vascular disorders that can cause stroke and constrict arteries that deliver oxygen to the brain.

In addition, two other lifestyle factors are crucial for maintaining healthy memory throughout life:

Lifelong learning and exercise of the brain

When it comes to memory, it's “use it or lose it.” Just as physical exercise can make and keep your body stronger, mental exercise can make your brain work better and lower the risk of mental decline. Here are some ideas for brain exercise, from light workouts to heavy lifting:

- Play games that involve strategy, like chess or bridge, and word games like Scrabble.
- Work crossword and other word puzzles, or number puzzles such as Sudoku.
- Read newspapers, magazines, and books that challenge you.
- Get in the habit of learning new things: games, recipes, driving routes.
- Take a course in an unfamiliar subject.

- Take on a project that involves design and planning: a new garden, a quilt, a koi pond.

Developing and maintaining social relationships

People who don't have social contact with family and friends are at higher risk for memory problems than people who have strong social ties. Social interaction helps brain function in several ways: it often involves activity that challenges the mind, it helps ward off stress and depression. So join a book club, reconnect with old friends, visit the local senior center. Being with other people will help keep you sharp!

For more information on strategies for preventing memory loss, see Helpguide's [Improving Your Memory: Tips and Techniques for Memory Enhancement](#) or use some of the reference sites listed below.

References and resources for preventing memory loss

[Improving Memory: Understanding Age-Related Memory Loss](#) – This series of articles presents the full text of a special health report from Harvard Medical School on the brain mechanics of memory, the ways and the degrees to which memory change with age, advice on how to respond to memory loss, and strategies for preventing memory loss and improving memory. (Princeton University Patient Education Center)

[You're Wiser Now](#) – Lead article in a special report on normal and abnormal brain aging that includes pieces on Alzheimer's conditions that mimic dementia, and strategies for maintaining a sharp mind. (AARP) Also see AARP's [Staying Sharp](#) series which has sections on memory loss and on lifelong learning, a good defense against mental impairment.

[Memory and Memory Loss](#) – Excellent explanation for the layperson of how memory works and the different degrees of memory loss, plus guidelines for preserving memory function. (Duke University Medical Center)

[Mild Cognitive Impairment](#) – Excellent description of this condition, how it differs from dementia, and how it can be diagnosed and handled. (University of California, San Francisco, Medical Center)

[Young in Mind](#) – Article discusses retention of mental sharpness and profiles several seniors who have kept their minds in good trim. See last page for helpful lifestyle tips. If your computer has the appropriate connections and software, you can listen to a lecture by top researcher [Dr. Arthur Shimamura on "Memory, Aging, and the Brain."](#) (The Exploratorium, San Francisco)

[The Mystery of Memory](#) – Excellent explanations of how memory works, what's happening when it doesn't, and how to maintain healthy memory. (University of Miami)

Tips for improving memory

[Memory Enhancement Seminars for Seniors](#) – Also available in PDF format, this site provides the full text of Dr. Skip Rizzo's presentation on memory enhancement for seniors. Includes detailed explanations of several techniques to improve your memory, including the method of location system, the pegword and link system, and the link method. Also includes a discussion of several cognitive distortions that hamper your ability to remember. (University of Southern California)

[Mental fitness – exercises for the brain](#) – Describes a complete "mental workout" — daily exercises for the brain. (bellydoc.com)

[Five Tools for Improving Your Memory](#) – Basic steps to keep memory in peak condition throughout life. (AARP)

Nutrition and memory

[Feed Your Head](#) – Part of a special report on mental acuity, this article lists a number of foods that can help you stay sharp longer. (AARP)

[Folate May Help Forestall Forgetfulness](#) – Summarizes research on how folate improves mental function and reduces memory loss. (US Department of Agriculture)

[Green Tea and Memory](#) – A readable student paper that shows the science behind green tea producers' claims of memory enhancement. (Vanderbilt University)

[Omega-3 Fatty Acids Improve Cognitive Function](#) (commercial site) – Report on how fish oils, specifically DHA, help prevent memory loss. (Life Enhancement)

Other resources that we used when writing this article

[Memory and Aging](#) – Q & A about memory loss, what to do if you're worried about losing your memory, and what to expect you grow older. (University of Michigan Health System)

[Memory Loss - Should I Be Concerned?](#) – Patient education forum discusses causes and tests for different types of memory loss. (American Geriatrics Society)

[Understanding Memory Loss](#) – Uses case-study examples to show different degrees and causes of forgetfulness and other lapses in cognition, with advice for diagnosis and ways to compensate for memory loss. (U.S. Department of Health and Human Services: National Institute on Aging)

[Forgetfulness: It's Not Always What You Think](#) – Discusses the distinction between memory lapses and dementia. (National Institute on Aging)

[Mental Decline in Aging Need Not Be Inevitable](#) – This article describes the enormous variation in abilities among people who are aging “normally” and makes the point that “we are responsible for our own old age.” (The New York Times)

[Symptoms of Alzheimer's](#) – Lists the ten warning signs of Alzheimer's disease and differentiates them from normal, occasional forgetfulness. (Alzheimer's Association)

Ellen Jaffe-Gill, M.A., and Gina Kemp, M.A., contributed to this article. Last modified on: 3/16/2007