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Memory and Aging: Older People *Can* Remember

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Everybody forgets sometimes. While memory loss is typically associated with normal aging, the fact is, people of all ages can have memory problems. Reasons for memory loss can include disease, drug interactions, nutritional deficiencies, physical inactivity, or just plain setting expectations too high.

As people live longer and growing numbers of older people experience memory loss from Alzheimer's disease, researchers are increasingly studying brain and memory function. There is mounting evidence that the brain is capable of changing and adapting well into old age. The good news is that individuals may have some control over how well the brain can function in later years.

Learning and memory involve a three-part process:

- First, getting information into the brain.
- Second, storing information.
- Third, being able to recall information when it is needed at a later date.

How Is Memory Acquired?

Information is first perceived through the senses of vision, sound, touch, smell, or taste. The "eye-minded" person best remembers things seen with the eye, such as printed information. He/she recalls (remembers) actions and incidents, such as videos or movies, but will remember few of the spoken words.

The "ear-minded" person best remembers sounds. He/she remembers spoken words, lectures, songs or anything produced by sound. Conversations may be remembered almost word-for-word with no recollection of the speaker. Most musicians are "ear-minded."

The "motor-minded" person best remembers things linked with certain motions, such as physical contact, writing, taste, or smell.

Many people have a dominant sensory mode,



but most people rely on a combination of senses to take in information. Persons with hearing or vision loss must rely on the motor senses to compensate for their loss.

Sights and sounds are unavoidable, but most of what the eyes see or the ears hear vanish in a fraction of a second, because there is no need to remember it. However, when the mind pays attention to a sensory perception, it becomes conscious thought and enters the short-term memory. The short-term memory holds six or seven bits of information for five to ten seconds before it is forgotten. The short-term memory is used for many tasks. For example, we look up a telephone number, immediately dial, and promptly forget the number. If the call does not go through, most people will need to look up the number again, because the number has left the short-term memory.

Most of the information in the short-term memory is never transferred into long-term memory for permanent storage. Long-term memory might be likened to a huge file cabinet where information is systematically stored until needed. The human long-term memory capacity is almost limitless. To successfully remember, one must store information using a system that will allow retrieval of

information when needed at a later time. Fortunately, the brain sorts and stores information without conscious effort, although the process involves several mental tasks, such as focusing on information needed or associating with already known information. Repetition also plays a fundamental role in the memory process, since information that is used frequently is more readily retrieved.

Individuals can sharpen memory skills by practicing some of the same mental tasks that the brain normally employs to encode information into the long-term memory. These include, focusing on information to be remembered, concentrating on specific information to reinforce memory and organizing information by categories. While these and other strategies are proven, a memory builder's success also depends on a desire to learn and a positive attitude toward learning and remembering.

How Age Affects Memory

Myths abound that older adults can't remember and that all people will become "senile" with age. In truth, all people forget occasionally, whether old or young. Therefore, we must choose what we want to remember, then put effort into remembering. In our society, memory lapse is bad only when one is old. The vast majority of older people will never suffer severe memory loss, but some changes do occur as a result of the aging process. Therefore, older people may need to make some adaptations in order to retain good memory. The most common difficulties older people have with memory relate to divided attention, learning new information, and retrieval of information.

Divided Attention. Older people often have difficulty paying attention to more than one thing at a time. Multiple conversations or competing activities going on at the same time may interfere with memory. For example, when an older person visits the physician, he/she may have several questions firmly in mind to ask the physician. However, when the physician asks other questions, the older person must refocus thoughts in order to answer and, in the process, may forget his/her own questions. Thus, answering questions while remembering questions divides attention. To compensate, take along a written list of questions.

Learning New Information. Another familiar aging myth is "you can't teach an old dog new tricks." Contrary to what many believe, research

indicates that new information can be learned and stored into the long-term memory with no effort or awareness on our part. When new material is difficult to understand, it may take some conscious effort and determination to learn and remember. Unless there is actual brain impairment, as might occur from mini-strokes, injury, dementia, etc., older people can continue to learn and remember to the end of life.

Information Retrieval. It may take longer for an older person to recall information than it does for younger individuals. Slower recall may be attributed to poorer organization of information in the long-term memory. Memory training techniques that encourage older persons to use more efficient mental organizational skills appear to be beneficial.

Factors That Affect Memory

Older persons are often heard to say, "I must be getting old. I can't remember things anymore." The truth is that anyone, regardless of age, can have memory problems. The memory process involves complex cognitive skills that can be affected by a host of physiological and psychological factors. Physical factors not related to age can severely affect one's ability to remember. Thus, persons of any age who experience persistent memory failure should take action to discover the cause, because many memory problems can be treated or cured.

Following are some of the conditions and symptoms that may cause memory loss or impairment:

Nutritional Deficiency. Adequate food and fluid intake are important to good health. Shortages of essential nutrients, such as B vitamins, especially riboflavin, carotene, zinc, and iron may impair memory. Foods known to enhance memory include "brain foods" such as red meat, eggs, and liver, rich both in iron and zinc. Because these foods are high in cholesterol and fat, many older persons avoid them. Also, older persons frequently have esophageal weaknesses that make swallowing meats difficult or impossible. Poor fitting dentures or missing and diseased teeth and gums may also interfere with eating a nutritious diet.

Drug Interactions. Many drugs commonly used by older adults can impair memory. Those most at risk of drug related memory problems are those with low body weight, a history of drug allergies, impaired kidney or liver function, and multiple health problems requiring medication. Older persons may be more sensitive to drugs than

younger persons, yet recommended dosages are often the same for both.

Drugs most likely to interfere with memory include anti-hypertensives, barbituates, tranquilizers, anti-diarrhea medications, and pain medications that induce sleep. Both over-the-counter and prescription drugs can cause drowsiness and confusion or interfere with concentration and the ability to remember.

Depression. Depression can rob persons of the motivation and concentration necessary to remember. Depressed persons may feel so low that they are not motivated to remember or, when they experience an occasional memory failure, they over-react by feeling they can't remember at all.

Physical Inactivity. When memory starts to fail, a brisk walk or some other exercise may boost brain power. Why? Because physical exercise increases the blood flow to the brain and helps the brain use oxygen more efficiently. Research shows that exercise significantly shortens reaction time and improves recall. Thus, elderly persons suffering a memory loss may reduce memory difficulties by participating in a regular exercise program.

Low Blood Sugar. Low blood sugar can cloud memory. Skipping meals or over-exercising can cause low blood sugar levels. Researchers believe that glucose is necessary for memory storage.

Stress and Anxiety. People of all ages can experience memory loss from too much stress or anxiety. Setting priorities and dealing with one thing at a time is ideal, but often impossible. Memory may be boosted and stress reduced if one can learn techniques to make remembering easier. Effective techniques include giving undivided attention to learning new information and concentrating only on details of information one needs to remember.

Inactivity. "Use it or lose it" is often heard in relation to muscles. Recent research indicates that the same may be true for brain function. Participation in mentally challenging activities may improve memory skills and enhance the ability to remember. Activities that exercise mental skills include working crossword puzzles; playing thought-provoking games like bridge, Jeopardy, chess, or Trivial Pursuit; learning computer skills; or participating in Elderhostels and other adult education classes.

Physical Illness. Severe memory loss in older persons is not a part of the normal aging process, but persistent memory loss is a sign that the body is not functioning properly. Physical illness can

cause memory loss or may further contribute to an existing mild memory problem. Common illnesses that may interfere with memory are infections, anemia, diabetes, dehydration, liver ailments, circulatory problems, thyroid conditions, kidney problems, strokes, emphysema, heart disease, and Parkinson's disease.

Dementia. Degenerative brain diseases such as Alzheimer's disease can result in permanent and irreversible decline in memory, thinking, and behavior. This type of memory loss generally has a slow onset. Another common type of dementia, multi-infarct dementia, may have a more sudden onset. However, most dementia patients experience difficulty remembering recent events or may have difficulty performing familiar tasks, unlike the kind of memory loss most people experience.

Declines in memory function can be the result of many individual factors or a combination of factors. Thus, persons who have difficulty remembering, particularly if the onset is sudden, should be encouraged to seek a thorough medical evaluation.

Ways to Improve Memory

Many persons who experience a mild memory loss can significantly regain memory function through memory training. Techniques proven to help strengthen or compensate for mild memory losses include the following:

Association. Associate new information with information that is already known and make a mental link. For example, make a mental picture of a filing system. Place new information in a familiar existing file where it can be retrieved later. Information absorbed by association usually becomes so thoroughly known that most people have instant recall.

Visualization. Create a mental picture or image. For example, to help remember the location of a car in a mall parking lot, make a mental picture of your car's location. Visualize the car parked next to the yellow light pole that is directly in line with the customer loading zone of a particular store.

Observation. Pay attention to details. It can be very difficult to remember information without taking stock of details. For example, the leaves of a woodvine and poison ivy look almost exactly alike. However, the two can be distinguished very easily if one pays attention to details and observes that the woodvine has five leaves in a cluster and poison ivy has three leaves in a cluster. The difference can further be reinforced by observing

that the word ivy has three letters and that poison ivy has three leaves to a cluster.

Written Instructions. Writing is one of the most common and most useful memory joggers. An organized person usually uses written lists, calendars, appointment books, and various other written instructions to keep from forgetting tasks or events.

Organization. Develop a systematic way to keep track of appointments or other needed items. Designate specific places to keep often used items, such as keys, important papers, bills, etc.

Change of Environment. An easy way to remember a non-routine task is to change something in the environment to jog the memory. For example, place clothes to be taken to the cleaners in front of the door. That simple act becomes a cue to jog the memory.

Sound Triggers. Use alarm clocks, timers, and answering machines to jog your memory. An alarm clock or timer can be set as a reminder to keep an appointment, make a telephone call, take medication, etc. If you are away from home and want to remember to do a task upon returning, leave a message on your home answering machine.

Group First Letter of Words. Sometimes you wish to remember a list of items. For example, one way to remember the five great lakes, is to take the first letter of each of the lakes and arrange them to form the word HOMES — Huron, Ontario, Michigan, Erie, Superior. A second way is to use the first letter of each word and form a sentence that is easy to remember. For example, “**H**enry **o**ften **m**isses **e**ating **s**upper.”

In summary, to improve memory, try the following techniques:

- Focus on something specific to remember.
- Review possible memory boosting strategies and select one.
- Try the strategy.

- If the selected strategy does not work, try another.
- If some information is particularly difficult to remember and causes undue stress, ask the question: Does it really matter?

Developing interests or hobbies and staying involved in activities that keep the mind and body active are among the best ways for older people to remain sharp and keep their mental abilities. Careful attention to physical fitness, including a balanced diet and prudent use of medication, may also go a long way to help older persons keep a healthy state of mind. Some physical and mental changes occur with age, even in healthy persons, but much pain and suffering can be avoided if older persons, their families, and their doctors realize that significant memory loss is not part of the normal aging process.

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