



# Fact Sheets

Emory Alzheimer's Disease Research Center  
Wesley Woods Health Center, 1841 Clifton Rd., Atlanta, GA 30329  
Grady Neurology Clinic, 80 Jesse Hill Jr. Drive SE Atlanta, GA 30303  
404-728-6950 <http://med.emory.edu/ADRC/>

## Cognitive Skills & Normal Aging

A commonly held misconception is that aging results in an inevitable loss of all cognitive abilities and that nothing can be done to halt this decline. Research, however, does not support these claims. While certain areas of thinking do show a normal decline as we age, others remain stable. Moreover, interventions may actually slow some of the changes that do occur.

- **Intelligence:** "Crystallized" intelligence, i.e., knowledge or experience accumulated over time, actually remains stable with age. On the other hand, "fluid" intelligence or abilities not based on experience or education tend to decline. Can you give an example of "fluid" intelligence?
- **Memory:** Remote memory or recall of past events that have been stored over many years remains relatively preserved in old age. Recent memory or the formation of new memories, however, is more vulnerable to aging.
- **Attention:** Simple or focused attention such as the ability to attend to a television program tends to be preserved in older age. Difficulties may be encountered, however, when divided attention is required such as trying to pay attention to the television and simultaneously talk on the telephone.
- **Language:** Verbal abilities including vocabulary are preserved as we age. Common changes have to do with word retrieval or the process of getting words out. It takes longer and is more difficult to find the words one

wants when engaged in conversation or trying to recall names of people and objects. The information is not lost but it is more difficult to retrieve.

- **Reasoning and Problem Solving:** Traditional ways of approaching solutions are maintained in older persons. Problems that have not been encountered during your life may take extra time to figure out.
- **Speed of Processing:** Aging does affect the speed with which cognitive and motor processes are performed. This does not mean that the activities cannot be performed, but rather that they take longer!

*What Other Factors Affect Cognitive Aging?*  
All of the above abilities can be affected by factors that change the efficiency with which older adults process information. These include:

- Medications which may produce side effects such as drowsiness and mental dullness;
- Sensory changes which can interfere with the processing of information (e.g., loss of hearing which can affect whether or not someone's name is heard when introduced);
- Health related changes such as arthritis and pain which can affect cognitive areas such as concentration and processing speed; and
- Changes in mood such as depression and anxiety which can alter one's motivation to learn new information and to apply active strategies.

*Can Anything Be Done to Compensate For or Slow Down Age Related Changes?* A previous view was that as we age, brain cells inevitably die off and are not replaced. This concept led to the belief that nothing could be done to alter the inevitable. We now know that certain interventions can sharpen cognitive processes. These include:

- *Reducing Stress:* Researchers have found that high stress levels impair learning and memory in both animals and humans. Strategies to reduce stress such as exercise may be beneficial.
- *Maintaining Good Health:* Regular visits to the doctor are critical to make sure that medical conditions which can themselves impair thinking are under good control. In addition, possible interactions among medications should be evaluated by letting your physician know all of the medications you are taking, even if not prescribed by that particular doctor. A diet rich in fruits and vegetables containing antioxidants such as blueberries, strawberries, and broccoli as well as certain fats such as olive oil may be neuroprotective.
- *Keeping Mentally Stimulated:* Studies have found that engaging in challenging cognitive tasks can protect against age-related declines in thinking and the risk of developing Alzheimer's disease. It is important to keep oneself stimulated through activities such as playing bridge, reading, and attending adult education courses.
- *Using Active Strategies:* There is evidence that some of the difficulties in storing new memories are due to the fact that older persons do not spontaneously use strategies to encode this information. When they do, age differences are weakened. In addition, older adults demonstrate good recognition of new information when they are helped with cues to jog

their memory. Strategies that can be helpful to facilitate memory include following a routine (e.g., always putting one's keys in the same place), using external techniques (e.g., a calendar, a pill box), and taking more time to actively process new information (e.g., when introduced to someone, pay extra attention and try to come up with an association to recall that person's name)