

## AGING

### Changes to Cognitive Functioning

#### Part 4 of a Series

The term cognitive function refers to a person's mental status and has to do with the human brain. The brain is what enables a person to ride a bike, read a book, laugh at a joke, and know when to eat or go to sleep. Cognitive function involves the ability to pay attention, intelligence and memory. Many older people will face minor memory impairments and slower cognitive processing ability as part of the normal aging process. For healthy older people, the losses tend to be more annoying than compromising daily functioning. The three main aspects of cognitive function include:

**ATTENTION** is often affected by whether or not a person has interest in a topic, the ability to focus and her or her level of attentiveness. If a topic is of little interest or importance, you are unable to concentrate, or you are not fully alert or conscious, it is unlikely that you will pay attention, let alone be able to remember much. For example, if you are unable to remember what you had for dinner last night it may not matter. Or, if you are experiencing pain or taking medication, you may find it difficult to participate in conversation and give something or someone your undivided attention.

**INTELLIGENCE**, often referred to as IQ, has to do with a person's ability to think rationally, act purposefully, and to deal effectively within society. The two types of intelligence are:

- Crystallized intelligence refers to the knowledge and skills we develop over time and is most influenced by our education and life experiences. Beginning around 60 years of age, many people will experience a slight decline in crystallized intelligence.
- Fluid intelligence is linked to our central nervous system and refers to reasoning, judgment and the ability to process information and problem solve. It has to do with our ability to deal with complexity and uncertainty. Fluid intelligence begins to decline as early as age 35 or 40.

**MEMORY** has to do with a person's ability to capture, store and retrieve information. The process of remembering information such as a person's name, where to find the keys, or remembering to do something in the future, can be slower and more challenging for older people.

It is a person's short-term memory, or ability to recall recent activities or events, that is most often affected by age. The information stored in our long-term memory, tends to cover a longer span of time, be of greater importance or is referred to more often. In many cases, older people simply need more time to process information as it may take them longer to bring their thoughts to mind or to express their thoughts. The more complex or involved the process of recalling information, the more disadvantaged an older person.

People are more apt to maintain the ability to perform tasks and remember things that are routine and require less memory. It is in unfamiliar environments or when performing new tasks, that older people are more likely to struggle as more memory effort is required.

Many adults find memory aids to help with recall. Aids such as keeping a list or posting reminder notices can be a helpful way to organize thoughts and information.

**OTHER CHALLENGES:** The incidence of behavioral changes increases as people age. Three common conditions include dementia, depression and delirium.

- **Dementia** is a term that describes disorders that affect the functioning of one's brain, and is characterized by mental decline and impairment. Three chronic health conditions associated with dementia are Alzheimer's (cognitive decline), Parkinson's (neurologic disorder) and Multi-Infarct Dementia (vascular disease). Over time, people with dementia lose the ability to function independently.
- **Depression** refers to a mood disorder that can affect both a person's mind and body. Depression is characterized by intense sadness that lasts for a period of two weeks or longer and impacts a person's ability to lead a normal life.
- **Delirium** is a disorder, not a disease, which appears suddenly, often within hours or days, and may come and go. A person who is delirious may appear disoriented, exhibit varying levels of consciousness, have disorganized speech, and an inability to comprehend what is being said. With delirium, there is typically an underlying cause such as infection, dehydration, physical illness, head injury, trauma, substance abuse, or a reaction to medications (e.g. prescription, over-the-counter, supplements).

If you have concern about cognitive function or behavior changes, pursue medical attention and ask about treatments that may be available. To help health care professionals identify the cause and determine the necessary treatment, it is important to report any symptoms.

---

The Center for Aging with Dignity offers the Aging Series as a community service. We are devoted to keeping people "SAFE After 60" by advocating for and advancing best-practice programs on the safety and mistreatment of older people. (A4-July '11) Copyright © 2006-2011 Charles Puchta – University of Cincinnati. **DISCLAIMER** – This publication is designed to raise health awareness and is not intended to replace the advice of health care professionals.

References:

- Craik, F. I. M. & Bialystok, E. (2006, March). Cognition through the lifespan: mechanisms of change, *TRENDS in Cognitive Sciences, Vol. 10*, No. 3, 131-138.
- Miller, C. A. (2003) *Nursing for Wellness in Older Adults* (4<sup>th</sup> ed., pp. 123-137). Philadelphia, PA: Lippincott Williams & Wilkins.

Health & Medical Reviewers:

1. Elaine Miller, DNS, RN - University of Cincinnati College of Nursing – Professor – Certified in Gerontology.
2. Mandi Sehgal, MD – University of Cincinnati Department of Family Medicine/Geriatrics – Assistant Professor.
3. Sophia F. Dziegielewski, PhD, LCSW – University of Cincinnati School of Social Work – Professor.