



"Psychology Works" Fact Sheet: Cognitive Disorders and Dementia

What is cognition?

Cognition is the ability of your brain to think, to process and store information, and to solve problems. Cognition is a high level of behaviour unique to humans. It results from the interaction of several mental processes including memory, language, perception, attention, and reasoning.

What is dementia?

Dementia is a label for a cluster of symptoms involving deterioration of cognitive function with resulting changes in behaviours that interfere with the ability of an individual to function independently in everyday life.

Dementia is usually defined as deficits in two or more areas of cognition that results in a change in an individual's ability to function independently. It is not a disease but a condition that results from any of several neurological diseases. There are many diseases that cause dementia and the dementia can progress or remain stable dependent on the underlying disease.

Dementia can result from diseases that affect the nerve cells (neurons) of the outer layer (cortex) or the inner structures (subcortex) of the brain. The symptoms vary according to the areas of the brain that are most affected.

For example, Alzheimer's disease affects cortical areas of the brain that involve acquiring or learning new information (amnesia), the ability to perform skilled acts or use tools (apraxia), the use of language (aphasia), or the ability to perceive objects or people (agnosia).

Diseases such as Parkinson or Huntington primarily affect subcortical regions and symptoms include movement disorders (tremor, stooped posture, initiation of movement), speech and voice abnormalities (slurring, stuttering), and attention. There are memory problems but they primarily involve the ability to retrieve information and less so to acquire information.

How common is dementia?

Approximately 8% of Canadians have some form of dementia but the prevalence increases substantially with age. Dementia occurs in approximately 2% of individuals between the ages of 65 to 74 but increases to 34% over the age of 85.



What conditions result in dementia?

Alzheimer's disease accounts for about 50% of all cases. It involves a gradual damage and ultimately the death of neurons. The most common early symptom is memory loss that involves rapid forgetting. Affected individuals cannot recall recent events such as conversations or significant personal events. Another common early symptom is difficulty remembering the names of people, even family members, and difficulty thinking of the most appropriate word to use. Alzheimer's is slowly progressive and may go on for several years before the end of an individual's life. As the disease progresses, more areas of cognitive function become involved including language, perception, and the ability to perform learned skills. The individual typically becomes bedridden in the last few years of the disease and death often occurs due to secondary causes, such as falls or infections.

Vascular dementia involves repeated damage to areas of the brain caused by blockages in the blood vessels. Vascular dementia can occur after a stroke or several strokes or very brief periods of disrupted blood flow to the brain (transient ischemic attacks or TIAs). The symptoms are variable and depend on where the strokes are located. Vascular dementia can progress as Alzheimer's disease does but the progress may not be gradual. Sudden worsening of cognition, relating to the immediate effects of a stroke or TIA, can be followed by periods of improvement. As the individual has more strokes, however, the severity of cognitive dysfunction worsens.

Lewy-body disease, along with vascular dementia, account for the second and third most common causes of dementia. Individuals with Lewy-body disease have symptoms similar to those exhibited by individuals with Parkinson's disease including a tremor, rigid and stiff movements, and flat facial expressions, as well as cognitive symptoms such as memory loss, fluctuating attention, difficulty reasoning, and difficulty putting together a sequence of movements. Individuals with Lewy-body disease frequently experience visual hallucinations and less frequently auditory hallucinations. Like Alzheimer's disease it progresses slowly.

Other conditions that result in dementia include:

- Parkinson's disease;
- Acquired Immune Deficiency Syndrome (AIDS);
- Pick's disease;
- post-traumatic head injury;
- frontal-temporal dementia;
- limbic encephalitis;
- heavy metal exposure;
- Normal Pressure Hydrocephalus;
- multiple sclerosis;
- Jakob-Creutzfeldt disease;
- Idiopathic Basal Ganglia Calcification;
- neurosyphilis;



- fungal infections;
- tuberculosis;
- Progressive Supranuclear Palsy;
- Huntington's disease.

Are some dementias reversible?

Yes, if the dementia results from some of the following conditions:

- depression;
- drug intoxication;
- metabolic and nutritional imbalance;
- infection and fever;
- cardiovascular disorders.

Do we know what causes Alzheimer's disease and other types of dementia?

In the last 20 years, there has been promising research to identify the neurological dysfunction that characterizes Alzheimer's disease but there may be more than one cause.

A small proportion of Alzheimer's disease is inherited but, for the majority of cases, the exact cause is unknown. There are genetic factors that predispose an individual to develop the disease. Not all individuals having the genetic factors suffer from Alzheimer's disease, which has led scientists to believe that there is some interaction between a person's environment and genetic make-up.

Are there treatments for dementia?

There are currently a number of medications that have been shown to slow the progression of Alzheimer's disease but do not stop or prevent the disease. Examples of medical treatments include donepezil (Aricept[®]), memantine (Ebixa[®]), and rivastigmine (Exelon[®]).

Non-medical treatments are also used to help individuals compensate for specific cognitive impairments such as memory loss. Individuals with severe memory loss can learn to use aids, such as a day-timer or an electronic personal assistant (PDA), to help remember things. Well-designed environments can also help in reducing excessive disability.

What is mild cognitive impairment (MCI)?

MCI is a state characterized by impairment of one or more cognitive processes, but the impairment does not result in a significant impact on the individual's ability to function independently. The causes can be as varied as the causes of dementia.



In fact, some individuals with MCI go on to develop dementia. It is estimated that, after 5 years, approximately 50% of individuals that were initially identified as MCI develop some type of dementia, most commonly Alzheimer's disease.

What can psychologists do to help people with cognitive disorders & dementia?

The consequences of various dementias are severe cognitive disorders (affecting memory, language, perception) due to underlying neurological diseases.

Psychologists have much to offer in assessing spared and impaired cognitive dysfunctions, not only in tackling the various disease processes through clinical research, but also in designing intervention programs that minimize the effects of cognitive disabilities.

Some of the ways a psychologist can help include:

- providing education to help understand the cognitive impairments and how they relate to changes in the individuals' behaviour and the impact of cognitive impairments on everyday activities;
- providing training to individuals to help them compensate for their cognitive impairments;
- teaching family members, friends, or care providers, means of helping the individual;
- providing the family members, friends, or care providers with coping skills to deal with cognitive and challenging behaviours; and
- providing access to good educational information and community support services.

Signs of possible cognitive impairment that warrant further investigations:

- difficulty remembering names of people they have been introduced to recently;
- needing the repetition of questions or comments due to the individual not being able to recall the information;
- requiring reminders to ensure they remember appointments;
- forgetting to take medications – this can involve either not taking their medications or “double-dosing” because they forgot they took them;
- forgetting significant recent events such as vacations, birthdays, anniversaries, to pay bills on time;
- misplacing or losing personal items;
- getting lost in familiar surroundings, or not recognizing landmarks;
- difficulty recollecting the name of a familiar person; and
- difficulty recalling the most appropriate word to use.

Note: In order to be of significance these problems should occur more frequently than the average person of the same age would experience.



Where do I go for more information?

For more information visit: <http://cognitivehealth.weebly.com/>

You can consult with a registered psychologist to find out if psychological interventions might be of help to you. Provincial, territorial and some municipal associations of psychology often maintain referral services. For the names and coordinates of provincial and territorial associations of psychology, go to <http://www.cpa.ca/public/whatisapsychologist/PTassociations>.

This fact sheet has been prepared for the Canadian Psychological Association by Dr. Guy Proulx, Department of Psychology, Glendon College, York University.

Revised: January 2015

Your opinion matters! Please contact us with any questions or comments about any of the *Psychology Works* Fact Sheets: factsheets@cpa.ca

Canadian Psychological Association
141 Laurier Avenue West, Suite 702
Ottawa, Ontario K1P 5J3
Tel: 613-237-2144
Toll free (in Canada): 1-888-472-0657