



# "Psychology Works" Fact Sheet: Cognitive Disorders and Dementia

## What Is Cognition?

Cognition is how people process information. It is the ability of your brain to register, consolidate, store and retrieve information to solve problems. Cognition depends on several mental functions including attention, perception, memory, language, and reasoning.

## What Is Dementia?

Dementia is the advanced stage for a cluster of clinical neurodegenerative disorders involving deterioration of cognitive abilities with resulting changes in behaviors that interfere with the ability of an individual to function independently in everyday life. There are two major classifications of dementias: neurodegenerative disorders and vascular dementias. There may be as many as fifty different forms of dementias.

Dementia is usually defined as a change in two or more areas of cognition that results in the reduction of an individual's ability to function independently. It is not a disease but a condition that results from any of several neurodegenerative or vascular disorders. The many dementia syndromes can progress slowly or in a stepwise fashion dependent on the underlying disorder.

Dementia can result from damage 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, the Alzheimer neurodegenerative disorder affects mostly cortical areas of the brain that involve acquiring or learning new information (amnesia), ability to perform skilled acts or use tools (apraxia), use of language (aphasia), or ability to perceive objects or people (agnosia).

Parkinson is another neurodegenerative disorder that 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 6.4% of Canadians above the age of 65 have some form of dementia but the prevalence increases substantially as we get older. Dementia occurs in approximately 2% of individuals between the ages of 65 to 74 but increases to 30% over the age of 85.





## What Conditions Result in Dementia?

**Alzheimer's syndrome** accounts for about 50% of all cases. It involves 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 person dies. As the disease progresses, more areas of cognitive function become involved, including spatial orientation, language, and the ability to perform sequences of learned skills. The individual typically becomes bedridden in the end stage and death 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. It can occur after a stroke or several strokes or 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 as gradual. Sudden worsening of cognition, relating to the immediate effects of a stroke or TIA, can be followed by periods of slight improvement. As the individual has more strokes, however, the severity of cognitive dysfunction worsens in a stepwise fashion.

**Lewy-body spectrum**, along with vascular dementia, account for the second and third most common causes of neurodegenerative disorders. Individuals with Lewy-body spectrum have symptoms like those exhibited by individuals with Parkinson, including tremor, rigid and stiff movements, 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 spectrum frequently experience visual hallucinations early on and, less frequently, auditory hallucinations. Like Alzheimer's syndrome, it progresses slowly.

## Other Conditions That Result in Dementia Include:

- Parkinson's neurodegenerative disorder;
- Mixed Alzheimer's-Vascular dementia;
- Chronic traumatic encephalopathy;
- Frontal-Temporal neurodegenerative disorders;
- Limbic encephalitis;
- Normal pressure hydrocephalus;
- Progressive supranuclear palsy;
- Jakob-Creutzfeldt disease;
- Idiopathic basal ganglia calcification;





- Corticobasal neurodegeneration;
- Multi-system atrophy;
- Amyotrophic lateral sclerosis;
- Korsakoff neurodegeneration;
- Huntington's disease.

## Are Some Dementias Reversible?

Yes, if the symptoms result from some of the following conditions:

- depression;
- drug polypharmacy;
- metabolic and nutritional imbalance;
- Vitamin B12 deficiency;
- Normal pressure hydrocephalus
- Hypothyroidism
- cardiovascular disorders.

## Do We Know What Causes Alzheimer's Disease and Other Types of Dementia?

In the last 20 years, there has been promising but also frustrating research efforts to identify the neurological dysfunction that characterizes Alzheimer's disease. The consensus is that there is probably more than one cause that will require combinations of therapeutic efforts including cognitive and behavioral ones.

A small proportion (2%) of Alzheimer's syndrome is inherited but, for most cases, the exact causes are still unknown. There are genetic factors that predispose an individual to develop the disease. Not all individuals having the genetic factors however will develop Alzheimer's syndrome, which has led scientists to believe that there are important interactions between a person's environment and genetic makeup.

## Are There Treatments for Dementia?

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

Cognitive and behavioral treatments are also used to help individuals and their care partners compensate for specific cognitive disorders. Individuals with memory loss can learn to use aids, such as a Day-Timer or





other electronic assistance to help remember things. Well-designed and predictable environments can also help in reducing excessive disability. Sustained care partner support and training in the use of behavior management techniques are also very helpful.

## 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 neurodegenerative disorders.

In fact, some individuals with MCI will go on to develop neurodegenerative disorders. It is estimated that, after 5 years, approximately 50% of individuals that were initially identified as MCI develop some type of neurodegenerative disorder, most commonly Alzheimer's syndrome. MCI is difficult to diagnose however, up to 25% of individuals initially diagnosed with MCI will not be found to have the condition on follow-up assessment.

## What Can Psychologists Do to Help People With Cognitive Disorders & Dementia?

The consequences of various neurodegenerative disorders are severe cognitive impairments like memory, perception, language, and executive functions.

Psychologists have much to offer in assessing spared and impaired cognitive functions, in doing clinical research, and in designing intervention programs to minimize the effects of cognitive impairments.

Some of the ways a psychologist can help include:

- provide clinical neuropsychological evaluations which are efficient and sensitive tools when combined to various biomarkers for the diagnosis of various dementias;
- providing education to help understand the cognitive impairments and how they relate to changes in the individuals' behavior 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 partners, means of helping the individual;
- providing the family members, friends or care partners, with coping skills to deal with cognitive and challenging behaviors;
- providing access to 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 to 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 marked 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?

**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, visit <https://cpa.ca/public/whatisapsychologist/ptassociations>. The Canadian Register of Health Service Providers in Psychology also has a listing service and can be reached through <http://www.crhsp.ca>.

*This fact sheet has been prepared for the Canadian Psychological Association by Dr. Guy Proulx, Director, The Glendon Centre for Cognitive Health, Glendon College, York University.*

<https://centerforcognitivehealth.ca>

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

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