

Mild Cognitive Impairment

Alzheimer *Society*

Other Dementias

What is Mild Cognitive Impairment?

People with mild cognitive impairment (MCI) have problems with memory, language, thinking or judgement that are greater than the cognitive changes associated with normal aging. Family, friends and the person with MCI may notice these changes and they can be objectively measured in cognitive tests, but the changes in cognitive abilities are usually not serious enough to interfere with daily life and independence.

A person with MCI has an increased risk of developing Alzheimer's disease or another dementia, but some people with MCI remain stable and others show improved cognitive abilities over time.

There is no single cause or outcome for people diagnosed with MCI. A wide range of cognitive abilities can be impaired, but for the majority of people who have MCI memory is the cognitive ability most affected.

Subtypes of MCI

People diagnosed with MCI have different patterns of symptoms and there are many possible underlying causes.

The most common subtype is *amnestic MCI*, where memory loss is the main symptom. The second subtype is *nonamnestic MCI*, where memory is not impaired but other thinking abilities such as organizing and planning, reasoning, learning or judgement may be affected.

How is MCI assessed?

Mild cognitive impairment is a clinical diagnosis. A medical professional determines the presence or absence of MCI by evaluating a person's cognitive and behavioural changes, and using professional judgement about the possible causes and severity of the symptoms.

Some hallmark symptoms may include memory problems, like starting to forget important information such as appointments, conversations or recent events. Other non-memory symptoms may be impaired thinking skills, such as having trouble finding words, frequently losing a train of thought, having difficulty organizing or planning, getting lost in a familiar environment, and poor judgement.

The symptoms of MCI are not as severe as those seen in people with dementia and not usually serious enough to interfere with functioning in everyday life.

There is no single, definitive test for MCI. The process of diagnosing or ruling out MCI may involve some or all of the following: taking a thorough medical history, assessing independent function and daily activities, observations from a family member or trusted friend, brief cognitive screening tests, neurological examination, mood evaluation, lab tests, and neuropsychological testing to assess multiple types of cognitive abilities.

How is MCI associated with Alzheimer's disease?

A person with mild cognitive impairment has an increased risk of developing Alzheimer's disease or another type of dementia. However, only 5 to 10% of people with MCI will progress to dementia each year and in studies to date, typically less than half of people with MCI will progress to dementia and a significant proportion may even improve.

Amnesic MCI, where the main problem is memory, has a stronger association with Alzheimer's disease than nonamnesic MCI. In some cases, the brain changes seen in people with amnesic MCI are similar to the changes seen in Alzheimer's disease, although they tend to be less severe.

Some people with nonamnesic MCI may develop Frontotemporal dementia or Lewy body dementia, and either type of MCI may lead to vascular dementia.

But research on MCI is still at an early stage and there are many unanswered questions. So it is not yet possible to predict with certainty whether a specific person will go on to develop Alzheimer's or another type of dementia, remain stable or improve over time.

What are the implications for the person affected and family members?

MCI can affect memory and thinking skills in subtle, but measurable ways that vary with the individual. While MCI does not significantly compromise a person's ability to function in daily life, it can influence how effectively the person manages new, less familiar or complex tasks such as financial management or work responsibilities. Having MCI can also affect the person's mood, social interactions, self-confidence and ability to organize, plan and make decisions.

These changes have an impact on family members as well, especially those closest to the person experiencing MCI. Family members may need to take on new roles and responsibilities, such as helping with finances, to compensate for the memory loss or other cognitive decline in the person with MCI. Family members also may feel a sense of loss and have difficulty coping emotionally with the changes they see in a relative experiencing cognitive decline.

It is not possible to predict what the future will hold for the person with MCI. But early diagnosis provides access to information, education and support that can help the person with MCI and family members to live effectively with MCI and minimize the negative impacts on their lives. Early diagnosis also allows people with MCI and their families to prepare and plan ahead for possible support needs, optimal living arrangements, legal and financial issues.

What do you need to know?

Mild cognitive impairment is a descriptive syndrome rather than a specific condition or disease. A person with MCI has subtle changes in memory or other cognitive abilities that are greater than would be expected with normal aging but less severe than with Alzheimer's disease or another type of dementia. These changes are generally not serious enough to significantly interfere with the person's daily life and independence.

Not everyone with MCI develops Alzheimer's disease or another dementia. Nor is it possible to predict with certainty whether a specific person diagnosed with MCI will develop dementia, remain stable or improve over time. But it is important to monitor the symptoms and arrange for a doctor or geriatrician to reassess the person six months or a year after the diagnosis.

Once a person is diagnosed with MCI, what can be done to minimize the effects of MCI, improve daily functioning and quality of life, and possibly reduce the risk of developing Alzheimer's disease or another dementia?

There are no drugs currently approved by regulatory bodies as treatments for MCI. Research is ongoing to develop and test drugs that may prove to be effective in preventing or slowing the progression of MCI to dementia.

Fortunately, there are many lifestyle changes and memory strategies the person with MCI can adopt to improve brain health, daily functioning and quality of life. There is a growing body of research evidence that suggests certain brain and heart health strategies that can improve daily cognitive functioning may also reduce the risk of MCI progressing to dementia in some people.

Researchers have determined as well that potentially treatable causes of cognitive decline are found in 10 to 30% of people with MCI. Treatable conditions such as medication side effects, thyroid problems, sleep apnea, vitamin B deficiency, depression and anxiety can interfere with cognition and memory. Identifying and properly treating conditions that might be contributing to cognitive problems can often lessen those symptoms.

Living well with MCI

It is important for the person with MCI and family members to focus on current abilities and try to avoid worrying about what might happen in the future. There are many ways for a person with MCI to maximize those abilities and enjoyment of life.

Positive lifestyle choices and changes that promote physical, emotional and cognitive health can have a significant impact in helping a person with MCI to function and feel better each day. Many research studies indicate that a healthy, balanced diet and regular physical activity directly and indirectly influence brain health and cognitive abilities in positive ways.

Staying socially connected and mentally stimulated through a variety of relationships, activities and interests will enhance the person's quality of life, and may boost brain health as well. Good sleep habits and using relaxation activities or techniques to reduce stress can also help the person to maximize cognitive abilities, since both lack of sleep and stress have been shown to impair memory.

Research is ongoing to learn more about whether and how specific healthy lifestyle choices may prevent or slow the progression of MCI to Alzheimer's disease and other dementias.

A person with MCI may also benefit by learning practical memory strategies that can be applied in everyday life. These might include using external memory aids, such as electronic calendars on a smart phone or computer; paper-based aids, like calendars, diaries, lists and pocket notebooks; and voice mail to leave messages as reminders. Examples of internal memory strategies would be forming a visual image of something specific you want to remember, or making information meaningful, such as the name Carol, by thinking of a favourite Christmas carol.

A diagnosis of MCI can lead to many unanswered questions. By seeking out information, education and support, people with MCI and family members can find practical answers to help them live effectively with this condition.

References

Mitchell AJ et al. Rate of progression of mild cognitive impairment to dementia – meta-analysis of 41 robust inception cohort studies. *Acta Psychiatr Scand* 2009; 119:252-265.

Mitchell AJ et al. Temporal trends in the long-term risk of progression of mild cognitive impairment: a pooled analysis. *J. Neurol Neurosurg Psychiatry* 2008; 79:1386-1391.

Jicha GA, Abner E. Schmitt et al. Clinical features of mild cognitive impairment differ in the research and tertiary clinical settings. *Dementia and Geriatric Cognitive Disorders* 2008; 26 (2): 187-92.

For more information:

Visit the Alzheimer Society's web site at www.alzheimer.ca or contact your local Alzheimer Society.

More information can be obtained from the following:

- Alzheimer's Association (US): www.alz.org/dementia/mild-cognitive-impairment-mci.asp
- Alzheimer's Society (UK): https://www.alzheimers.org.uk/site/scripts/documents_info.php?documentID=120
- Anderson, Nicole, Murphy, Kelly, Troyer, Angela, *Living with Mild Cognitive Impairment*, Oxford University Press, 2012.
- Mayo Clinic: <http://www.mayoclinic.org/diseases-conditions/mild-cognitive-impairment/basics/definition/con-20026392>

The contents of this document are provided for information purposes only and do not represent advice, an endorsement or recommendation, with respect to any product, service or enterprise, and/or the claims and properties thereof, by the Alzheimer Society of Canada. This information sheet is not intended to replace clinical diagnosis by a health professional.

Alzheimer Society

Alzheimer Society of Canada

20 Eglinton Avenue West, 16th Floor, Toronto, Ontario, M4R 1K8

Tel: 416-488-8772 • 1-800-616-8816 • Fax: 416-322-6656

E-mail: info@alzheimer.ca • Website: www.alzheimer.ca

Facebook : www.facebook.com/AlzheimerCanada • Twitter : www.twitter.com/AlzCanada

