AMERICAN PARKINSON DISEASE ASSOCIATION
Strength in optimism. Hope in progress.

Mild Cognitive Impairment in Parkinson's Disease

Definition of MCI

Mild cognitive impairment (MCI) is an early stage of cognition difficulties that does not interfere with a person's ability to perform activities independently. Someone with MCI has thinking problems that are greater than expected for a person's age and level of education, but the person can still function with minimal issues throughout the day. MCI can be a risk factor for dementia, a state in which cognitive difficulties do interfere with normal activities.

There are many different types of cognitive skills that we use to process information and apply knowledge. These include:

- Visuo-spatial skills (the ability to navigate the world in three dimensions)
- Executive function (the ability to plan and organize multi-step activities to achieve a goal)
- Attention
- Language
- Memory

MCI in Parkinson's disease (PD) can affect one or more of these skills and is divided first into two main subcategories: amnestic (affecting memory) and non-amnestic (affecting other cognitive domains) and then into further categories depending on which cognitive domain is impacted.

Before any cognitive impairment, mild or otherwise, is attributed to PD itself, reversible causes of cognitive issues must be checked for and addressed. These include medical conditions such as thyroid disease, vitamin B12 deficiency, intercurrent infection, seizures, strokes, and head trauma. Certain medications (including those that cause sleepiness), poor sleep, and excessive daytime sleepiness can also contribute to cognitive dysfunction. Depression may mimic cognitive impairment.

Prevalence of MCI in PD

Approximately 25% of people with PD who do not have significant cognitive issues have MCI. The prevalence is lower in those who are younger and have had PD for shorter amounts of time, and increases with age as well as with duration and severity of PD.

How can I tell if I have MCI?

People with PD and MCI typically report that although they are able to perform all their activities, they are aware that their thinking is not what it once was. They may notice that they cannot multitask like they once did. They can become more overwhelmed with complex responsibilities that used to be completed more easily (e.g., hosting the family Thanksgiving dinner). Math problems that they once were able to solve in their head, now require pen and paper. They may also notice that they forget names or words more easily, with the nagging feeling that the word they are looking for is on the "tip of their tongue."

What should I do if I notice that I have cognitive changes?

If you notice that your cognitive abilities are not what they once were, bring this to the attention of your neurologist. Leading up to your visit, take note of how often you are aware of these issues and the types of challenges you are having so you can give an accurate explanation to the doctor. They will likely evaluate you for the reversible causes of cognitive problems that are mentioned above. After that, your neurologist may perform a cognitive screening test in the office or may refer you for more extensive testing. The testing will involve tasks that assess the different cognitive domains – such as drawing complex shapes, remembering a list of words, or performing math in your head. The cognitive testing will determine if you meet criteria for MCI.

If based on your testing, you are diagnosed with MCI, your neurologist will likely want to repeat the testing periodically to see if your scores change over time.

What should I do if I notice that my loved one with PD has cognitive changes?

Sometimes it is the care partner who notices that thinking changes have occurred. You may have noticed that your loved one has more trouble coming up with words or names or that he or she has more trouble keeping him or herself organized. If this is the case, you may want to gently mention what you have observed to the person with PD, during a time of low stress (and not in the moment when the cognitive issue is apparent). You can refer to an incident that may have occurred earlier in the day. Be sure to emphasize that the only reason that you are raising the issue is so that the two of you can bring it to the attention of the neurologist, potentially treat any reversible causes, and take any necessary steps to improve the situation.

Conversion From MCI to Dementia in PD

People who have been diagnosed with MCI are more likely to progress to dementia than those with normal cognition over the same time frame. Different studies report different rates of progression, but it may be as high as a 50% conversion from MCI to dementia over a 5-year period. Rates of progression may vary depending on which cognitive

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domains are initially affected, with one study suggesting that non-amnestic MCI is more likely to progress to dementia than amnestic MCI.

It is worth noting that some studies show that about 10% of people with MCI reverted to normal cognition over time, indicating that MCI is a complex and varied state that is not completely predictable.

Are there any ways to prevent progression from MCI to dementia?

Many potential medications as well as nutritional supplements have been tested in clinical trials to see if they improve cognition. Unfortunately, none have been shown to slow down the progression from MCI to dementia. However, we do know that keeping physically fit, mentally active, and socially engaged all have their role in maintaining cognition. Novelty is also good for the brain – so you may want to challenge yourself by learning a new skill.

Aerobic exercise has been associated with stabilization and potentially even improvement in cognitive functioning in those who have MCI, so staying active and trying new types of exercise can be very beneficial for your brain, as well as your body. Diet may also play a role in maintaining cognition. The Mediterranean-DASH Intervention for Neurodegenerative Delay or MIND diet has been shown to have positive impacts on brain health and slow cognitive decline. The MIND diet is very similar to the Mediterranean diet and emphasizes whole grains, green leafy vegetables, nuts, legumes, and berries. Fish is the preferred protein and olive oil is the preferred fat.

Strategies to Mitigate Effects of MCI

By definition, the cognitive issues of MCI do not interfere with independent living. However, the symptoms can still have an impact on your life – affecting your confidence and ability to perform complex activities. There are no medications currently approved for MCI in PD and in general, there are no medications that are prescribed off-label for MCI in PD either. However, simple lifestyle modifications can be very helpful in minimizing the effects of the cognitive changes on your activities:

- Make sure that you are doing only one cognitive task at a time
- Do not attempt complicated tasks when you are tired or not performing at your best
- Keep to-do lists
- Keep written instructions for tasks that require multiple steps
- Write down information that you need instead of trying to remember it
- Keep household items in the same place every day

Various types of cognitive training programs, which involve performing a set of standardized tasks designed to improve cognition, have been tested in PD with some benefit. Cognitive rehabilitation, an individualized set of cognitive activities performed one on one, often with an occupational therapist, can introduce you to strategies that address your specific needs.

Clinical Trials in MCI

Although there are no treatments approved yet for MCI in PD, research is underway, including clinical trials testing new compounds. Clinical trials are a key step in getting any new medication approved. Therefore, if you have MCI, ask your neurologist about whether there are clinical trials that are appropriate for you.

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