

Managing Cognitive Problems in MS



MS[®]

National
Multiple Sclerosis
Society

**CHERISH
DIAGNOSED IN 2002**

Managing Cognitive Problems

BY NICHOLAS G. LAROCCA, PHD
WITH MARTHA KING

Clinical Psychologist Dr. Nicholas G. LaRocca is Vice President of Health Care Delivery and Policy Research at the National MS Society.

Martha King was director of publications at the National MS Society (retired).

The editors wish to acknowledge Christopher Christodoulou, MD; Stephen Rao, MD; and John DeLuca, PhD for their assistance.

The illustration on page 1 is reprinted, with permission, from **Multiple Sclerosis: A Self-Care Guide to Wellness**, Nancy J. Holland and June Halper, eds., published by Paralyzed Veterans of America.

Reviewed by: Pat Bednarik, MS, CCC-SLP, MSCS; Adrienne Boissy, MD; James Bowen, MD; and Patricia Kennedy, RN, CNP, MSCN.

© 2016 NATIONAL MS SOCIETY. ALL RIGHTS RESERVED.

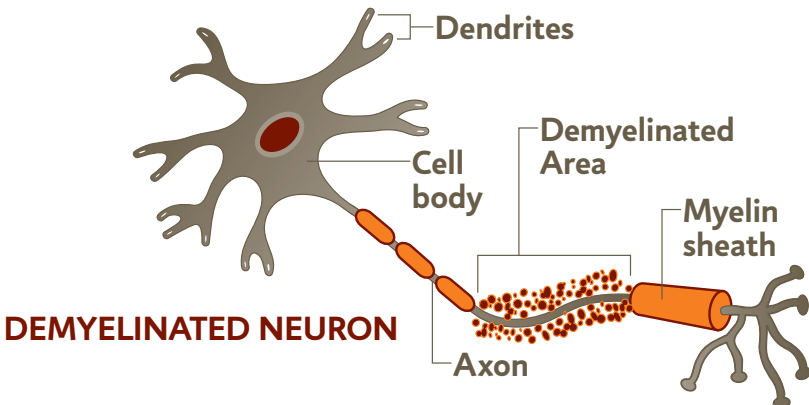
Introduction

About MS

Multiple sclerosis involves random attacks on a fatty material called **myelin** that insulates nerves within the brain and spinal cord — the structures that make up the central nervous system. When myelin is attacked, the body is able to make some repairs, but eventually patchy areas of scarring develop on nerve fibers where healthy myelin once was. The nerve fiber (or axon) and cell may also be damaged. In addition, MS can result in loss of brain tissue.

These three types of changes — loss of myelin, damage to axons and nerve cells, and loss of brain tissue — may occur in any part of the central nervous system and account, in part, for the wide variety of possible MS symptoms.

The most common symptoms include problems with balance, strength, vision, fatigue, muscle control, bladder or bowel function, sensation, mood and cognition.



Cognition

Cognition refers to all of the high level functions carried out by the human brain, including processing of information, attention, memory, planning and problem-solving, visual perception and verbal fluency.

MS has the potential to affect mood, personality and cognition — the attributes that make us unique — either directly or indirectly. The idea is upsetting, but the facts emerging from research are encouraging — **while mild to moderate problems are relatively common, severe damage to these aspects of the self are not.**

Physical symptoms such as numbness or visual problems, which are common in MS, are usually the result of damage to specific, easily identified areas in the brain and spinal cord. In contrast, it is not always clear what specific damage is the cause of the cognitive changes that occur.

Cognition is sensitive to many potentially disruptive factors. These include normal aging as well as disease or injury. Cognitive functions can also be affected temporarily by tension, emotional stress, depression, sleep disturbances, menopause or fatigue. In addition, they can be affected by nutrition, for example, by low blood sugar (hypoglycemia).

Some prescription medications and drug or alcohol abuse can also disrupt cognitive performance. Many of these factors can and do occur in combination.

MS fatigue is among the most frequently mentioned factors that may affect cognitive functions. People with MS may find

that at certain times they are just too tired to tackle cognitive tasks. Recent studies have documented the existence of **cognitive fatigue** which refers to people's perception that cognitive functioning temporarily declines during an extended period of cognitive effort, such as one might experience on the job. As a result, cognitive functions may be in better working order at some times of the day than at others.

Which cognitive functions might be affected by MS?

Although investigators are still in the process of answering this, some consistent information has emerged.

- **Memory or recall.** Problems with memory — the most frequently reported cognitive challenges by people with MS — seem to be limited primarily to recall of recent events. For example, a person may have trouble remembering an important phone number learned in the past month or a phone conversation from earlier in the day. In contrast, the same person will have little difficulty remembering information from the distant past, such as the meanings of words that were learned in school.

Several studies suggest that most people with MS are able to learn and store information adequately but may then have difficulty recalling it quickly and effectively when they need it. However, Dr. John DeLuca of the Kessler Foundation in New Jersey has offered another explanation. In his research, Dr. DeLuca found that some people with MS may take longer

to **learn** new information. When people with MS are given additional time to learn information, their ability to recall that information is equal to that of people without MS. This finding suggests that poor recall in MS may be partly the result of not having adequately learned something in the first place.

Although memory problems are the ones most commonly reported by people with MS, the research shows that what some people experience as changes in their ability to remember things are actually problems with attention and the processing of information.

- **Attention and concentration.** Divided attention (the ability to focus and concentrate when there is more than one stimulus competing for attention) is particularly difficult for some people with MS. For example, driving while using the phone is considered hazardous because the driver's attention is "divided" between driving and talking. In everyday life many situations involve divided attention, such as trying to carry on a conversation while fixing dinner. Often referred to as "multi-tasking," divided attention can pose a real challenge for people with MS, particularly as they try to remember something that they were not able to learn adequately in the first place.
- **Speed of information processing.** Memory, attention and all of the other skills described here require the ability to process information quickly. Dr. Stephen Rao of the Cleveland Clinic completed a study in which he found that people with MS performed as well as control volunteers on a specialized memory task, but they did so at a significantly slower speed. Many people with MS feel that their thinking is slowed, and say they are not able to think through an issue and respond as quickly as they once did. Memory problems may therefore be related to difficulty keeping up with the flow of information — which means that some information is not getting processed in the first place.

- **Abstract reasoning, problem-solving, and executive functions.** All of these functions are involved in a person's ability to analyze a situation, identify the main points, plan a course of action and carry it out. Some people with MS report that their judgment has also been affected. More often, family members or employers notice changes in problem solving or reasoning before the person with MS does.
- **Visual-spatial abilities.** These functions include the ability to recognize objects accurately and to draw or assemble things. Visual-spatial abilities are involved in many everyday tasks such as driving, finding one's way around or packing a suitcase.
- **Verbal fluency.** Fluency problems are different from the MS speech problems that slow speech down or change voice quality. A fluency problem often manifests itself as the "tip-of-the-tongue" phenomenon: a person wants to say a word, it's on the tip of the tongue, but she or he just can't think of it.

What research shows

When cognitive problems stem from physical damage done by MS, the source is probably damage to brain tissue. Lesions (or areas of scarring) in the cerebral hemispheres (the higher areas of the brain) are the ones of greatest significance.

Lesions in the white matter of the brain (where myelin occurs in abundance) are particularly common near the inner cavities of the brain (ventricles) through which the cerebrospinal fluid flows. Research has shown that it is not only the myelin that is damaged in MS, but also the nerve fibers (axons) and cells themselves. While the white matter has been thought to be the area most affected, we now know that significant damage

can also occur in the gray matter; recent studies suggest that cognitive problems are more closely associated with gray matter damage.

Studies using magnetic resonance imaging (MRI) have shown that the number and volume of brain lesions and the amount of nerve tissue loss are related to the presence and severity of cognitive changes. Studies have found that areas of scarring occur with roughly equal frequency in the right and left halves of the brain; damage to the structures that join the left and right halves of the brain is particularly significant.

Dr. Rao and others have found that about half (approximately 50 to 60 percent) of people with MS show some evidence of cognitive changes. The exact figure is unknown and estimates have ranged both higher and lower. Studies that recruit people with MS from the community tend to show lower figures, while figures based on samples drawn from MS clinics are usually higher. About 40 percent have mild dysfunction, while about 5 to 10 percent have moderate to severe impairments. Therefore, while the majority of people with MS will experience cognitive changes, the changes for most will be mild to moderate. The severity of cognitive impairment tends to be greater in persons with progressive MS as compared to those with relapsing remitting MS.

But what do mild or moderate problems mean in people's lives? This question is hard to answer because people's circumstances vary so much. For one person, mild cognitive impairment could require a major life shift — for example, the end of a career or

professional practice that is particularly affected by the person's cognitive changes. But another person with the same degree of impairment might not need to make any lifestyle shift, because he or she is able to cope using self-help measures or through reasonable accommodations on the job. Retired individuals with relatively fewer demands on their cognitive abilities are likely to be able to cope quite well with everyday activities.

What can be done to alleviate cognitive problems?

- **Get it out in the open.** Years ago, professionals advocated not discussing MS-related cognitive problems in public because the issue would upset people. Today, healthcare professionals recognize that people with MS almost always want information — on this or any other topic. Talk over your concerns with your doctor or nurse. You may want to take a copy of this booklet to your next appointment.
- **Share with others.** Often, fears about a problem are much worse than the reality. To keep up with the facts, ask questions, read, attend lectures if possible, and talk to others who have similar problems. For the most recent information, visit nationalMSSociety.org.
In MS self-help groups or educational meetings, cognitive dysfunction is a frequent topic of discussion. Sharing helps on an emotional level as well as on a practical one. Comparing notes and learning how others cope can help to expand one's own resources and remove the feeling of isolation.

- **Manage your mood.** Depression, which is very common in people with MS, can have a significant impact on cognitive functioning. In fact, one of the key symptoms of depression is slowed or impaired thinking. So if you think you may be experiencing changes in your memory or thinking, ask yourself whether depression may be playing a role, and ask your healthcare provider whether an evaluation for depression might be a first step toward managing those changes. For people whose cognition is affected by their mood, successfully treating the mood issue can improve their cognitive functioning.
- **Make it a family affair.** Family members may not realize that the person with MS has experienced cognitive changes as a part of the disease. When the person with MS forgets parts of conversations, misses appointments or misplaces things, it may be viewed as laziness, indifference or carelessness. If this happens, family members and friends need help to understand what is going on.
- **Get counseling if it seems appropriate.** Not everyone who experiences cognitive changes needs counseling. However, counseling or psychotherapy can help people deal with the impact of cognitive problems on self-esteem and on everyday life. They also address depression or anxiety, which can adversely affect cognitive functioning.
- **Explore compensatory options.** While most cognitive problems are best addressed through rehabilitation with a professional, here are some practical strategies that may help to compensate for cognitive changes:
 - Where memory is weak, try substituting organization. Get a good organizer (paper- or technology-based) and learn to use it consistently to help with storage and retrieval of

information, reminders, appointments and alarms. Record appointments, to-do lists, phone numbers, family activities, driving directions — anything that you need to remember but are likely to forget. Use your paper or computer/tablet/smartphone organizer to replace little scraps of paper and notes that may get misplaced or lost.

- When you are trying to learn something new, give yourself extra time to practice. Studies have shown that with extra practice people with MS can improve their ability to recall information later.
- Set up a family calendar to track everyone’s activities.
- Assign a particular place for storing frequently used items such as your car keys and encourage family members to return borrowed objects to their proper spots. For example, the scissors always go in the top drawer of the desk.
- Work on your focus and concentration. Sometimes we “forget” things because we never really learned them in the first place. This can happen because we are not giving our full attention to tasks or conversations. Improving your concentration can enhance your recall. Practice focusing on one thing at a time when you are reading, watching TV, or seeing a movie. For example, if you are reading a newspaper article, focus on the main point of the article. If you are watching a movie, focus on the names of the characters. Then in everyday tasks, try to apply that focus on one thing at a time. If you are involved in a conversation, focus on what is being said — block out distractions such as noise in the immediate environment, nearby conversations and unrelated thoughts that pop into your mind.
- Plan your most challenging cognitive tasks for your best time of day. To reduce the cognitive fatigue that can occur

during prolonged activities that require sustained effort or concentration, schedule periodic breaks. Whenever your thinking begins to feel foggy or slowed, take a short breather or shift your attention to something else in order to give your mind a rest, and then try again.

- Use mental pictures to aid memory. For example, to increase the likelihood that you will remember to close the windows before leaving the house, visualize streams of muddy water flooding into every room through the open windows. Hold on to that image for a few seconds and you are more likely to remember to close windows later. Another useful strategy is to take a few seconds before leaving home to visualize the route you'll drive to your destination.
- When you meet a new person, write down his or her name as soon as you can gracefully do so. Later, note in your organizer the most striking things about that person. Another strategy is to repeat the person's name to yourself in the context of your conversation with them: "Nice meeting you, **Jim**. I'm also from Nebraska."
- When you encounter word-finding problems, don't persist in trying to think of that elusive word. Try to shift your attention to something else. The word you want will come back to you later. Just express the idea you had in mind using a different word so that the flow of conversation continues.
- Visit your library, bookstore or e-book site for books designed to help organize time or improve memory. Some of these involve wildly complicated schemes, but many have useful suggestions.
- Make sure you're getting enough sleep and that your sleep is not being unduly disrupted by trips to the bathroom, muscle spasms or other problems.

- Talk to a doctor, nurse or dietician about your eating habits to ensure that you are getting good nutrition.
- After consulting with your doctor, follow a consistent exercise program to help stay in shape physically, mentally and emotionally.
- Keep challenging your mind with puzzles, reading, stimulating conversation, video games, etc. The old saying, “If you don’t use it, you’ll lose it” applies here.

Consider professional evaluation

A professional evaluation may be helpful if you or those closest to you notice a change for the worse in cognitive functions. For example, do you have increased trouble remembering things? Is it becoming harder to stay focused on a task? Do you experience lapses of judgment, trouble coming up with words in conversation, slowed thinking, or difficulty organizing projects or daily activities?

An evaluation is particularly important if any of these changes get in the way of your work or social life or create distress for you. Evaluation may also be of value if you are considering a career change or planning to enter school or a training program. You may also be interested in getting an evaluation because you are starting on a disease-modifying medication and want to be able to track cognitive changes over time.

Cognitive testing may also highlight other treatable symptoms. In one of Dr. Rao’s studies, 40 to 50 percent of people with

MS believed their cognitive functions had been affected by the disease; professional evaluation confirmed this statistic. However, the people who actually had cognitive problems were not always the ones who had diagnosed themselves. Some who were severely cognitively impaired were unaware that any changes had taken place. Some had significant cognitive fatigue. Others were instead suffering from depression.

Depression can be treated with medications and/or psychotherapy. Severe fatigue can be alleviated with medication and energy management strategies, as well as effective management of any symptoms that interfere with sleep. And cognitive changes can be treated through cognitive rehabilitation. But the choice of appropriate treatment depends on the right diagnosis!

A formal cognitive evaluation may require several hours, and it is costly. The decision to go ahead should be made after discussions with your physician, family and any other professionals who might be involved in your care. Other causes for cognitive problems should be carefully ruled out, and preliminary, less expensive testing considered. Do not assume that your insurance plan covers this type of evaluation, even if your physician prescribes it. Check with your insurance carrier so you can make a fully informed decision. Under certain circumstances your state vocational rehabilitation agency may pay for this type of evaluation if you are a vocational rehabilitation client and planning to try to return to school or work.

Assessment of cognitive function should be done by a qualified **neuropsychologist** (a specialist in the behavioral changes caused

by brain disease or trauma) — preferably one who has had experience with people who have MS. A psychologist without this training may have difficulty selecting the proper tests and interpreting the results.

In addition to neuropsychologists, appropriate and comprehensive cognitive evaluations can be done by **speech-language pathologists and occupational therapists who have experience with MS**. Each of these three professions may use slightly different tests, but all three can provide valuable insight concerning cognitive changes. In any given locale, one or more of these MS professionals might not be available, and so being able to choose any of the three is a great advantage.

A **neurologist** or **psychiatrist** can perform briefer evaluations, but these generally detect only severe cognitive dysfunction. Janis M. Peyser, PhD, of the University of Vermont completed a study in which she found that almost half of the patients whom neurologists considered to be without cognitive problems were found to have problems when tested by a neuropsychologist.

About cognitive rehabilitation

Today, it is routine to consider some form of cognitive rehabilitation after a head injury or stroke. In the last few years, the use of cognitive rehabilitation in MS has increased dramatically as techniques have been developed for the more common problems such as memory and attention/concentration.

For example, in a recently published randomized clinical trial, Dr. Nancy Chiaravalloti and colleagues at Kessler Foundation have shown that a behavioral treatment to improve the ability to learn new information can significantly improve memory performance. Improvements were seen in cognitive testing, everyday life activities, and in the brain (using MRI); people with MS in the treatment group showed increased brain activity and formed more new connections in the brain compared to the placebo group. Dr. John DeLuca and colleagues have conducted several studies showing that there are specific techniques that can be used by therapists to improve learning and memory in people with MS.

Cognitive rehabilitation is designed to help people compensate for loss of memory, slowed learning ability and other cognitive changes. It is provided by neuropsychologists, occupational therapists or speech/language pathologists.

Ordinarily, cognitive rehabilitation involves one or more sessions per week over several weeks or months. Each session typically lasts about an hour and includes a variety of activities depending on individual needs: exercises designed to enhance memory, concentration or spatial skills. A good deal of time may be devoted to “compensatory strategies” such as learning how to be more organized, how to use a computer effectively, or how to manage time.

The goals of treatment are individualized, and progress toward those goals may be checked periodically. In many instances, the cognitive rehab program may include meetings with family members to help them understand the nature of specific problems and how they can help.

Stress management, counseling or psychotherapy may be incorporated in the treatment plan if these seem warranted.

- **Compensatory strategies.** A systematic program of cognitive rehabilitation will train the person with MS in the consistent use of techniques that compensate for deficits. We all use some of these methods. Common memory aids include writing things down in notebooks, posting notes on the refrigerator or carrying a smartphone.

Many of us also use time-management strategies, filing systems, checklists for complex tasks, reading comprehension strategies, and special-purpose diaries. We routinely employ mental tricks to make the most of our abilities. The little poem “Thirty Days Hath September” is a compensatory strategy for remembering the length of the months.

Cognitive compensatory strategies, like their physical cousins, the cane and the walker, do not address the underlying problem. They offer an alternative way to perform a task that has become difficult. In other words, we may not be able to alter an underlying **impairment** (the weakened memory, for example), but we can still find ways to dramatically improve **function**. Does it really matter whether we get the phone number we need out of our head or from an address book or smartphone?

- **Improving function.** It’s tempting to believe that the right mental exercise might strengthen memory. Some functional improvement methods are based on theories and research concerning the “plasticity” of the brain (the ability of the brain to recover from damage, perhaps by shifting functions to undamaged areas).

With some exceptions, these appealing methods have not been as successful as originally hoped. But some retraining exercises do help. A comprehensive program of cognitive rehabilitation is

likely to use a mixture of retraining and compensatory strategies. For example, supervised programs of graded practice can improve attention and concentration levels, and these improvements can then facilitate the effective use of compensatory strategies in everyday situations. (Graded practice means practice in a given task in which, over time, the difficulty is increased.)

- **Physical exercise.** There has been increasing interest in the potential of physical exercise to improve cognitive function both in healthy adults and individuals with chronic conditions such as Alzheimer's and MS. There are now some promising preliminary studies showing the value of physical exercise on cognitive function in MS. While preliminary, the hope is that exercise coupled with cognitive rehabilitation may significantly improve cognition and hence everyday function. Other studies have shown the value of exercise for people with MS in terms of fitness and quality of life. Consult with your physician before beginning any exercise program.
- **Medications.** At present, the pharmacy has little to offer; research clearly needs to continue.

A medication called Aricept® (donepezil hydrochloride) is currently used to treat memory problems in Alzheimer's disease. There has been interest in the possible use of Aricept in MS. A clinical trial in which 69 individuals with MS participated found that Aricept improved performance on memory tasks. However a larger multi-center trial of the same medication did not find any benefit.

A few published studies have also looked at the effects of some of the MS disease-modifying medications on cognitive function. The results of these studies have been mixed, with some but not all showing benefits on cognitive function. However, since all of the approved disease-modifying therapies have been shown to

reduce the number and severity of MS attacks and reduce signs of damage to brain tissue as seen on MRI, they may all, in the long term, have beneficial effects on cognitive function.

A few other medications have shown some promising results in small, uncontrolled studies of cognitive function. These have included testosterone gel, monthly treatments with a combination of cyclophosphamide and steroids, and erythropoietin (a drug thought to have potential neuroprotective effects in MS). However these very preliminary results need to be confirmed in larger, controlled studies.

Other drugs have been studied for possible use in treating MS-related cognitive changes. These have included memantine (a drug approved for the treatment of symptoms of Alzheimer's) and methylphenidate. There is some initial promise with l-amphetamine, but larger trials are needed. Unfortunately none of these have proven to be effective in treating cognitive dysfunction in MS.

Some doctors prescribe other types of medications to treat cognitive changes in MS. These include medications designed to improve attention. However, there are no published studies to support the use of other medications for improving cognitive functioning in MS.

Clearing up misconceptions

Cognitive dysfunction is probably subject to more misconceptions than any other topic in MS, in part because we tend to avoid discussing it. Let's dispel some misconceptions.

- **Misconception: MS does not affect cognitive functions or affects them only rarely.**

Most people with MS will never be troubled by severe cognitive problems (as in Alzheimer's), but mild to moderate problems are fairly common. Unfortunately, many healthcare professionals still cling to the idea that cognition is rarely, if ever, affected — which is clearly not the case. An open discussion about cognitive function with your healthcare providers is a good way to start dealing with it.

- **Misconception: People who have cognitive dysfunction are emotionally unstable or have a mental illness.**

Cognitive dysfunction is not an emotional or mental disorder — it is a neurological problem. Someone can have cognitive problems and be perfectly normal emotionally and mentally. While emotional problems such as depression or anxiety can adversely affect cognition, cognitive problems should not automatically be attributed to these causes.

- **Misconception: Cognitive functioning can be assessed by asking a few simple questions.**

Cognitive function can only be accurately assessed through a battery of standardized tests administered and interpreted by someone with the proper training. The “bedside mental status” test can detect only the most severe cognitive problems.

- **Misconception: All people with MS should have a detailed cognitive assessment.**

Not at all. A comprehensive assessment is necessary only if problems occur and then only after thorough consultation to rule out other factors. However, a baseline assessment can be very helpful in tracking future changes and to guide treatment.

- **Misconception: When cognitive problems appear, they worsen rapidly.**

Although very few long-term studies have been completed, results thus far suggest that these problems progress slowly in most people.

- **Misconception: Cognitive problems only occur in people who are severely disabled.**

On the contrary, people who are severely disabled physically may have no cognitive problems at all. Studies completed by Robert Heaton, PhD, formerly at the University of Colorado, and his colleagues and by William Beatty, PhD, formerly at the University of Oklahoma Health Sciences Center, have shown that there is only a very weak relationship between extent of physical disability and cognitive dysfunction in MS. On the other hand, cognitive problems can affect people who have very few physical problems.

- **Misconception: Cognitive problems only occur late in the course of MS.**

Doctors Beatty and Heaton found that there is little relationship between duration of MS and the severity of cognitive dysfunction. In fact, cognitive problems can be the primary presenting symptoms in newly diagnosed persons with MS.

- **Misconception: Cognitive problems only occur in people with progressive MS.**

Cognitive dysfunction is likely to be somewhat worse in people with progressive MS. Slowed processing speed and problems in learning and memory are common among persons with relapsing-remitting MS, but individuals with any kind of MS can experience cognitive problems.

- **Misconception: Relapses or attacks of MS do not involve cognitive functions.**

Not true. People with MS can have attacks in which cognitive problems become dramatically worse very quickly. The problems may then improve as remission proceeds. However, recent studies have shown that “Isolated Cognitive Relapses” (relapses that affect only cognition, without necessarily including sensory/motor signs) may result in longer term cognitive problems.

- **Misconception: People with MS-related cognitive problems have euphoria.**

Euphoria involves exaggerated and unrealistic expressions of happiness, often accompanied by a lack of concern about oneself. Euphoria is actually rare, affecting less than 10 percent of the MS population. It occurs almost exclusively in people with the most severe cognitive impairments.

- **Misconception: Cognitive problems in MS are similar to Alzheimer’s disease.**

Not true. MS bears little resemblance to Alzheimer’s disease. MS-related cognitive dysfunction is almost never as severe as Alzheimer’s.

MS-related cognitive problems are usually limited to the functions discussed in this booklet. The problems may stabilize at any time, and no further progression may occur. The actual rate of progression will vary from person to person as is the case with the physical symptoms of MS.

In contrast, Alzheimer’s affects many different functions. The deficits it causes increase rapidly and often predictably. Language declines along with memory, and a person with Alzheimer’s will eventually be unaware of where he or she is and forget even his or her own name.

Suggested reading

Multiple Sclerosis: Understanding the Cognitive Challenges, by Nicholas LaRocca and Rosalind Kalb, with John Deluca and Lauren Caruso. New York, Demos Medical Publishing, 2006, 152 pages.

Facing the Cognitive Challenges of Multiple Sclerosis, 2nd ed. by Jeffrey N. Gingold. New York, Demos Medical Publishing, 2011, 240 pages.

The MS Workbook: Living Fully with Multiple Sclerosis, by Robert T. Fraser, George H. Kraft, Dawn M. Ehde, and Kurt L. Johnson. Oakland, CA, New Harbinger Publications, Inc., 2006, 243 pages.

Improving Your Memory for Dummies, by John B. Arden. New York, Wiley Publishing, 2002, 336 pages.

Aricept® is a registered trademark of Eisai Inc.

The National Multiple Sclerosis Society (“Society”) is proud to be a source of information on multiple sclerosis related topics. The information provided is based on professional advice, published experience, and expert opinion, but does not constitute medical or legal advice. For specific medical advice, consult a qualified physician. For specific legal advice, consult a qualified attorney.

The Society does not endorse products, services or manufacturers. Such names appear here solely because they are considered helpful information. The Society assumes no liability for the recipient’s use of any product or service mentioned. The Society does not independently verify whether the information provided by each service provider is accurate. The Society undertakes no responsibility to verify whether the service provider is appropriately licensed and certified and has applicable insurance coverage.

Early and ongoing treatment with an FDA-approved therapy can make a difference for people with multiple sclerosis. Learn about your options by talking to your healthcare professional and contacting the National MS Society at [nationalMSSociety.org](https://www.nationalmssociety.org) or 1-800-344-4867.

The Society publishes many other resources about various aspects of MS. Visit [nationalMSSociety.org/brochures](https://www.nationalmssociety.org/brochures) or call 1-800-344-4867.

Other popular resources include:

- At Home with MS: Adapting your Environment
- Hiring Help at Home: The Basic Facts
- Managing Progressive MS
- Mood & Cognition in MS: What You Can Do (book and video)
- So You Have Progressive MS?

The National MS Society's mission is for people affected by MS to live their best lives as we stop MS in its tracks, restore what has been lost and end MS forever. To fulfill this mission, the Society funds cutting-edge research, drives change through advocacy, facilitates professional education, collaborates with MS organizations around the world, and provides services designed to help people with MS and their families move their lives forward.



National
Multiple Sclerosis
Society

nationalMSsociety.org

1-800-344-4867