

# August 2020 Newsletter



## The Senior Moments of MS

For most people, difficulty with thinking and memory are a natural part of growing older. For those living with MS, cognitive changes may also occur as a direct symptom of the disease due to the loss of myelin surrounding nerve fibers in the brain. Some may notice problems with their memory, particularly finding words or remembering events from the past. Others find they have trouble doing more than one thing at a time (multitasking), or they take longer to process information. Some people find they have problems learning new tasks, while others may struggle with organization, planning or prioritizing. For many, the cognitive effects of MS represent its greatest challenges. The subject of cognitive impairment in MS is discussed extensively in our [March 2019 newsletter](#), including its risk factors and effects, how it is measured and different ways of coping with it. In this article we primarily focus on cognitive issues in people with MS in the context of aging.



[Cognition](#) refers to the wide range of mental functions involved in learning and comprehension. In MS, some are more likely to be affected than others. These include memory, attention and concentration, information processing (dealing with information gathered by the five senses), executive functions (planning and prioritizing), visuospatial skills (the ability to identify visual and spatial relationships among objects) and verbal fluency (word-finding). Interestingly, a number of functions are less likely to be affected in people with MS, such as general intellect, long-term memory, conversational skill and reading comprehension.



Cognitive dysfunction is common in MS, especially in older people with the disease. An individual may experience difficulties in only one or two areas of cognitive functioning or in several. For most, the changes are mild and limited in scope.

For some, however, cognitive dysfunction may be more widespread and challenging. A [2019 study](#) compared cognitive impairment in older and younger people with MS. They found 77 percent of individuals with MS over the age of 55 experience difficulty thinking, compared to 43 percent of those who are younger. Information processing speed (IPS) was the most impaired cognitive function, followed by verbal learning, executive function, and visuospatial learning. Another [study](#) concluded roughly half of elderly people with MS have decreased cognitive processing speed and verbal fluency (subjects in the study had a mean age of 62).

[Researchers](#) at the University of Alabama studied changes in cognitive function with aging in 129 individuals with MS with similar results. Subjects were assigned to one of three age groups (young, middle-aged, and older). Results showed older subjects with MS demonstrated significant impairments in cognitive function compared to younger ones, and these differences were not explained by a person's amount of physical activity, years of education, years since diagnosis, or race. Specifically, older subjects had significantly worse IPS, verbal learning and memory than young and middle-aged subjects. Older and middle-aged participants also demonstrated significantly worse visuospatial learning and memory than those in the younger group.

There is evidence that cognitive impairment can occur in all [forms of MS](#), but is slightly more likely in progressive MS (which typically occurs later in life). According to a [recent study](#), slow IPS and occasional memory deficits are typically observed in clinically isolated syndrome and relapsing-remitting MS (RRMS). Executive functions (in particular verbal fluency) may also be impaired.



Individuals with relapsing forms of the disease are more likely to experience cognitive dysfunction during a flare. More frequent and severe deficits in memory and IPS are reported in secondary progressive than in RRMS. People with primary progressive MS typically experience a wide range of cognitive deficits in IPS, attention, memory and executive functions.



Cognitive changes in people with MS generally progress slowly, however they are unlikely to improve significantly once they have begun. [Researchers](#) at the University of Buffalo studied the rate of cognitive and motor decline over time in subjects with MS. They evaluated the ability to walk, upper extremity function, IPS and memory in 698 people with MS (aged 29–

71 years) and 226 healthy controls (aged 18–72 years). Results show the progression of physical disability in subjects with MS accelerates with age. Cognitive difficulties affecting IPS, attention and memory were present in most older subjects with MS, however rates of decline in these areas did not vary and appeared to be similar to rates of decline in normal aging. This study team concluded accelerated cognitive impairment in older adults with MS may be due to the presence of other age-related cognitive pathologies. [Researchers](#) at Pennsylvania State University also concluded individuals with MS do not appear to show accelerated rates of cognitive decline with aging and they adjust well, particularly if they have sufficient social support.

MS is an autoimmune disorder characterized by [neurodegeneration](#) and [brain atrophy](#). In general, difficulty with thought processes correlates with the amount of brain atrophy and the number of [lesions](#) seen on MRI. Other cognitive impairment conditions affecting older individuals, such as [Alzheimer's](#) and [Parkinson's disease](#), involve the same degenerative processes. Researchers at the University of



Buffalo looked at the differences between these different conditions and the possibility that they may co-occur. This [study](#) compared brain changes in 112 older subjects with MS, 108 older people with Alzheimer's, Parkinson's, or [amnesic mild cognitive impairment](#), and 184 age-matched control subjects. Participants had MRI scans to look for structural changes in their brains that might help explain declines in cognitive function.

Comparisons of MS and Alzheimer's brain scans revealed the low brain volume seen in MS subjects was comparable to that seen in subjects with Alzheimer's disease. It's important to note further study is required to understand whether these changes are due to a worsening of nerve damage in MS or a comorbid occurrence of other neurodegenerative diseases.



Cognitive dysfunction substantially impacts the lives of people with MS and their families. It may also place significant additional strain on an individual's caregiver, who has an insider's view of its effects on their loved one's life. A [recent study](#) compared the amount of cognitive decline in people with MS as measured with a standard clinical evaluation with the perception of decline from the patient and caregiver's perspective. Forty-nine people with MS and their caregivers were included in the study. Results show patients and their caregivers disagree on the presence of cognitive difficulties. The caregiver's perception of their loved one's cognitive deficit showed stronger correlations with standardized testing than the patient's perception. This difference in perception was directly related to the patient's age and severity of cognitive impairment. These findings suggest that as individuals with MS age, they may become accustomed to their cognitive difficulties, and thus become less aware of them. They also stress the importance of the caregiver's point of view and open communication with clinical professionals for accurate evaluation of cognitive function.

MS is a complex disease with many psychological aspects. Adjusting successfully to the changes the disease imposes over time requires understanding and addressing its often-hidden mental changes along with the more obvious physical ones. Because the disease can affect any part of the brain, almost any cognitive function can be impaired, and symptoms may range from having a mild impact to more pervasive changes which affect a person's quality of life. Employing a number of [strategies](#) to increase attention and memory can

help minimize the effect of cognitive difficulties on daily life. Reaching out for [help](#) when needed can also help a person with MS and their family continue to live life to its fullest.

