

# Living with MS

## Cognitive Health and MS

Cognition refers to all of the high-level processes carried out by the human brain. Similar to the processing done by a computer, the human brain takes in information, stores it, processes it and generates output based on that information. MS is known to cause problems with one or more of these cognitive functions. Approximately 65% of people with MS will experience some changes in cognitive functioning, most commonly related to speed of information processing, memory and attention. It is important to report changes of this kind to your healthcare provider so that you can get a proper assessment of the problem as well as strategies to help you manage it. With or without these cognitive changes, however, mentally stimulating and challenging activities to promote cognitive health are important for everyone.

Exercising your mind can help reduce the impact of MS-related cognitive changes that may occur. Neuroplasticity is the ability of the brain to form and reorganize neural connections. The human brain forms functional networks which are interactions between neurons that work together to complete certain functions. When a specific part of the brain is damaged due injury or a disease like MS, other parts of the brain within that same functional network can learn how to take over functions that were lost. Studies using functional magnetic resonance imaging (fMRI) have shown that the brains of people with MS are organized differently due to neuroplasticity and the reorganization of these networks to compensate for dysfunction caused by MS.

Cognitive reserve is your brain's ability to improvise and find alternative ways of getting things done. Basically cognitive reserve is how well your brain can deal with the damage MS causes and be neuroplastic. Research has shown that people with greater cognitive reserve are better able to hold off the degenerative brain changes associated with MS. Although you cannot go back in life to add to your cognitive reserve, it is possible at any age to increase your cognitive reserve.

Factors that increase cognitive reserve and neuroplasticity include physical activity, education, social interaction, intellectual stimulation and cognitive remediation which is exercise for your brain. Factors that decrease cognitive reserve and neuroplasticity include poor nutrition, poor sleep, substance abuse and stress/anxiety.

Examples of ways to stimulate your brain include brain games like those found on AboveMS.com or doing crossword puzzles and Sudoku.

### References:

<https://www.nationalmssociety.org/Living-Well-With-MS/Cognitive-Health>  
<http://www.momentummagazineonline.com/forging-new-pathways-brain/>  
<https://www.health.harvard.edu/mind-and-mood/what-is-cognitive-reserve>  
<https://doi.org/10.3928/02793695-20100302-01>



**Exercise your  
Brain!**

1760 Co. Rd. "J"  
Wahoo, NE 68066  
(402) 443-4191



MS Specialty Clinic  
Mary Filipi, PhD, APRN  
Melissa Fulton, APRN  
402-443-1456

## The use of MRI in MS

Magnetic resonance imaging or MRI is a tool used to diagnose MS as well as to track disease progress and efficacy of disease modifying therapies (DMT). Unlike CT scans and X-rays, MRI does not use radiation. Instead MRI uses magnetic fields and radio waves to measure the relative water content in tissues. Myelin is a fatty tissue so it repels water. When the myelin is damaged like in MS, the fat is stripped away and the area holds more water. This leads to those spots showing up on the MRI as either bright white or a darkened area depending on which type of MRI scan is done.

Healthcare professionals differ in their opinion of how often an MS patient should have an MRI. Most do agree that if the disease is stable, patients should have an MRI on a yearly basis. However, this changes if your MS is not stable or if you start a new DMT. Then the recommendation is 3-6 months.

References: Kaunzner and Gauthier (2017). MRI in the assessment and monitoring of multiple sclerosis: an update on best practice. *Ther Adv Neurol Disord*, 10(6), 247-261

## Upcoming Events:

- Saturday, August 25 – SMC's 3<sup>rd</sup> Annual Health Fair
  - 9am-noon @ Saunders Medical Center
  - Several MS related vendors
  - Free screenings
  - Contact Sam Jack if you have questions or wish to register for heart screenings
- Friday, December 7 – MS Clinic's 4<sup>th</sup> Annual Night of Lights
  - Food and Drinks at Champions Run Country Club in Omaha
  - Arrow Stage Line buses to look at Christmas Lights
  - Tickets are \$30 each or \$50 if you buy two
  - Contact Sam Jack if you have questions or wish to purchase tickets

## General Information/Tips

- Effective July 1, 2018, Mary Filipi will only be in the office on Mondays and Tuesdays. Abby Chase, APRN will be starting August 20<sup>th</sup>. Melissa Fulton will continue to be in the office Tuesday-Friday.
- Due to our increasing patient load, we may need to start charging patients who cancel their appointment less than 24 hours in advance.
- Please arrive a half hour before your appointment to ensure there is adequate time for the check in process and our providers do not get behind for other patients.
- To schedule appointments please call registration at 402-443-4191. Our nurse is unable to schedule appointments and will have to transfer you.
- Please notify Patti at 402-443-4191 ext 533 if you have any change in your medical or prescription insurance. Also please make sure to give registration both cards at check-in.
- If you have questions regarding the newsletter, please email Sam at [sjack@smcne.com](mailto:sjack@smcne.com).

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