

Strategies To Boost and Protect Your Brain Health

CAN DO
MULTIPLE SCLEROSIS

WEBINAR 
WEDNESDAYS

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UPCOMING PROGRAMS

March 19

JUMPSTART

Ways To Support Healthy Brain Function

April 8

WEBINAR

How Does Aging Affect My MS and Vice Versa?

April 16

JUMPSTART

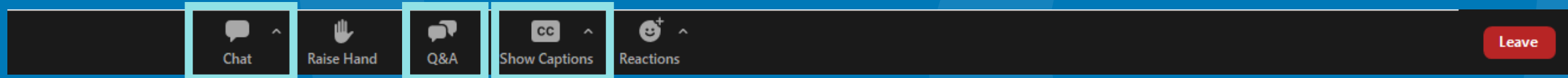
MS and Aging: Living Your Best Life



[CANDO-MS.ORG](https://cando-ms.org)

How to Ask Questions During the Webinar

Type in your questions using the Questions Box



Provide comments and engage with the speakers and audience using the **Chat Box**



NEW! Closed captioning



YOUR SPEAKERS



Laura Hancock
Neuropsychologist

Ohio



Rachel Duke
Physician Assistant

Florida

What is Cognition?

How your brain thinks and understands:

1. Take in information
2. Make sense of it
3. Use that information



Cognitive Abilities

Memory Systems


- Learning
- Remembering

Executive Functions


- Reasoning
- Decision-making

Information Processing

- Attention
- Processing Speed
- Language Understanding



Up to 65% of people living with MS will experience significant cognitive changes due to the disease




Is Cognition Affected by MS?

Cognitive changes can happen even before a person is diagnosed with MS

- Cognitive changes tend to be gradually progressive overall. We think this is related to several factors, including growing/accumulating disease burden, disease duration, degree of brain atrophy, and aging
- Commonly affected skills include:
 - **Processing speed**-how quickly a brain does general processing; reaction time
 - **Memory**- learning and recall of new information
 - **Working memory**- mental gymnastics – holding a phone number in your mind long enough to dial it

Cognitive Reserve



“The adaptability of cognitive processes that helps explain the differential susceptibility of cognitive abilities or day-to-day function to brain aging pathology or insult”

Stern, Archives of Clinical Neuropsychology, 2021



- A term used to account for the differences sometimes observed in the amount of pathology or damage compared to the brain’s actual functional ability
- Essentially, reserve is the brain’s ability to cope with changes related to aging, disease, or injury
- Especially relevant in MS: cognitive impairment is only moderately associated with the extent of findings on brain MRI

Can I Build Cognitive Reserve?

Not something that can be easily measured (there is no single test we can use to measure it)

Thought to be related to a variety of factors, including:

- Baseline global cognitive/intellectual abilities
- Educational attainment
- Occupation – specifically, mentally challenging jobs
- Type of leisure activities a person engages in
- Speaking multiple languages (or learning a new one)
- Socioeconomic status (indirectly influences these other factors)



Healthcare Team Members for Managing Cognitive Symptoms

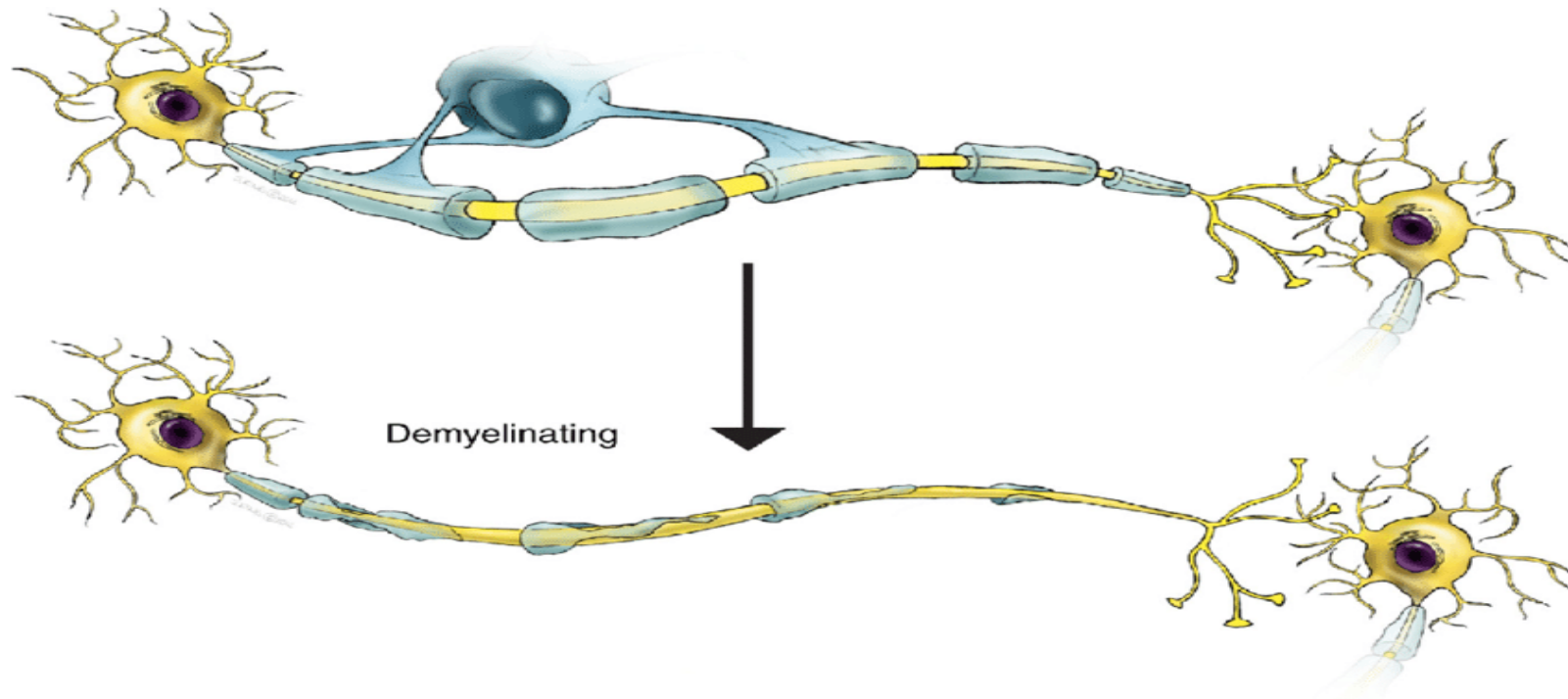
- Physicians (MD/DO) or Advanced Practice Providers (NP/PA)
- Neuropsychologists
- Rehabilitation Psychologists/Neuropsychologists
- Speech Language Pathologists (Speech Therapist)
- Occupational Therapists
- More indirectly:
 - Dietician – to help incorporate more foods that promote brain health
 - PT – to help design a safe activity plan



What Causes Cognitive Impairments in MS?

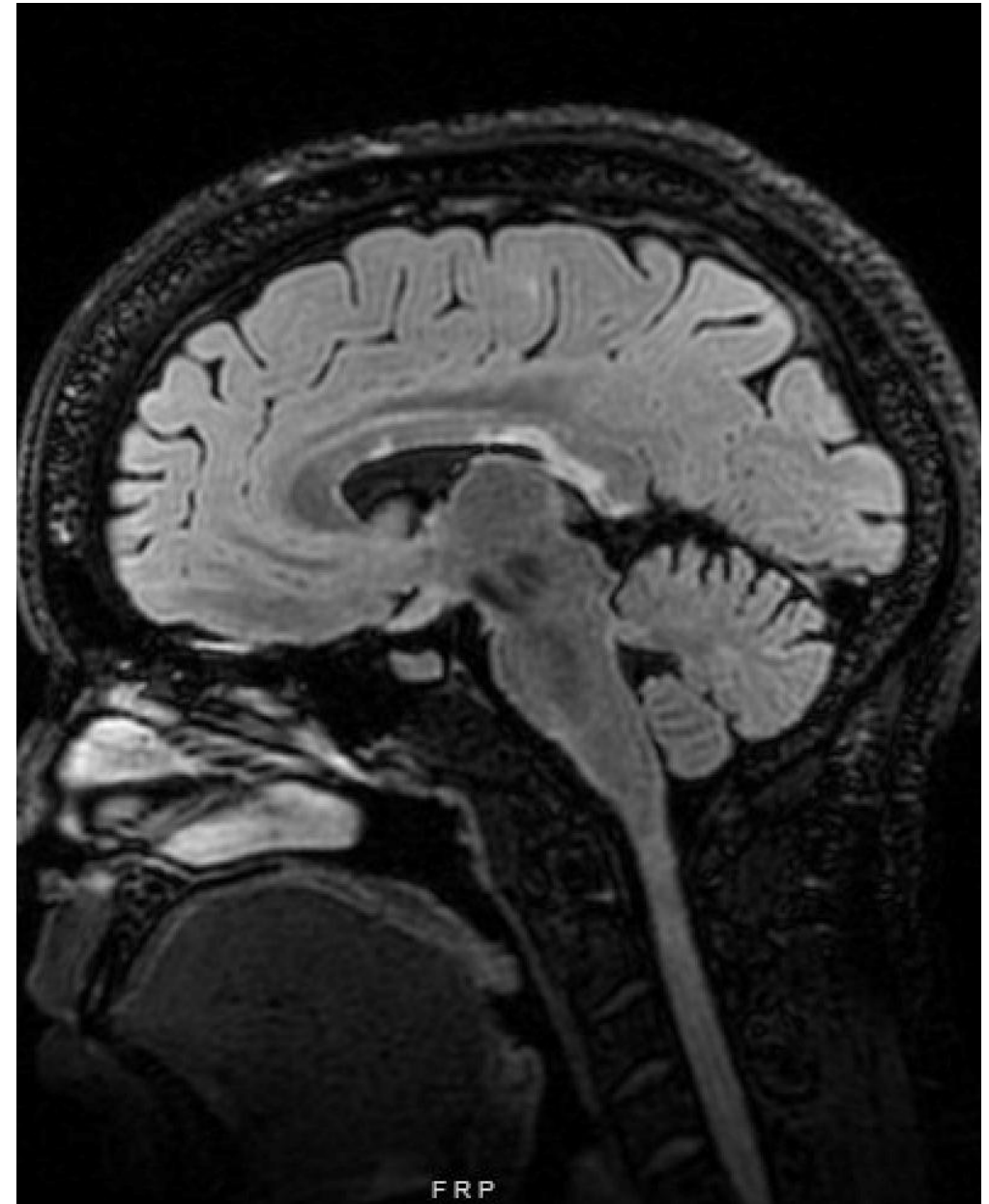
Demyelination

- Damage to the protective coating around nerve fibers that conduct messages from one neuron to another
- Causes slowed or stalled communication



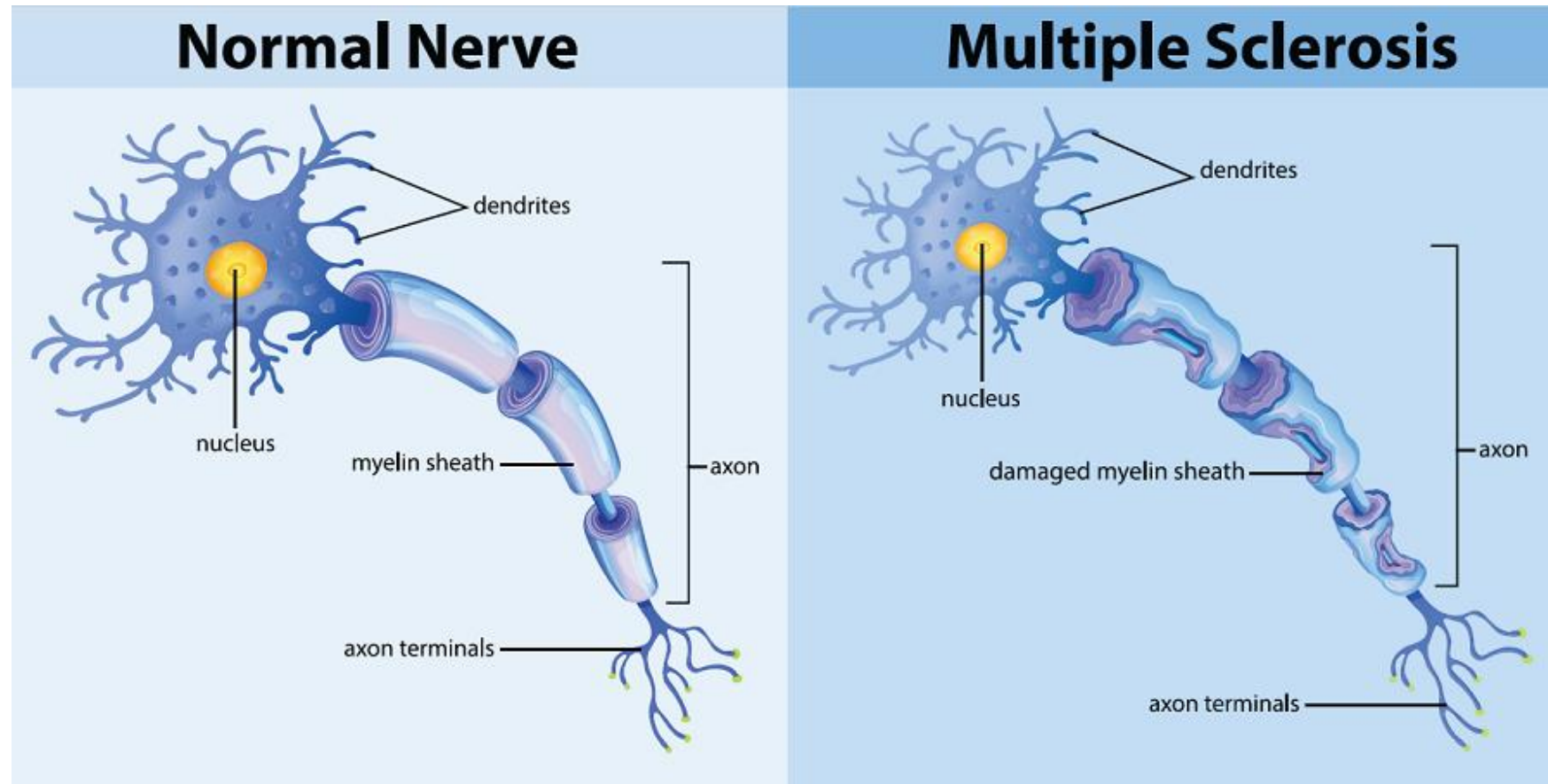
Lesions in key locations

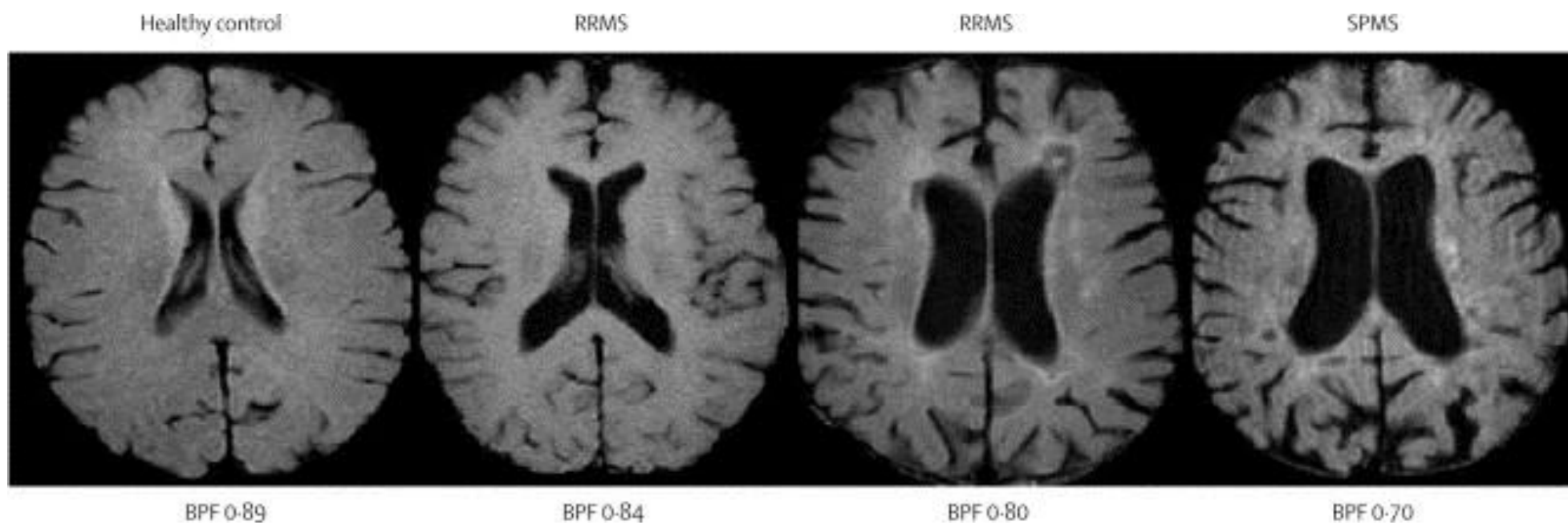
- Lesions can sometimes form in areas that the brain has trouble compensating for (such as the tissue that connects the hemispheres or in frontal-subcortical circuits)



Axonal damage

- Chronic inflammation damages the nerve fibers (axons) that conduct the electrical communication
- Causes brain atrophy (shrinking)





The measurement and clinical relevance of brain atrophy in multiple sclerosis, Bermel, Robert A et al.; The Lancet Neurology, Volume 5, Issue 2, 158 - 170

Brain atrophy

- **MS patients experience brain volume loss at approximately 2-3 times the rate of healthy controls.** The average MS patient loses approximately **0.7% of brain volume per year.**
- Likely represents irreversible tissue loss caused by multiple factors – acute and chronic inflammation, axonal loss, gray matter pathology.

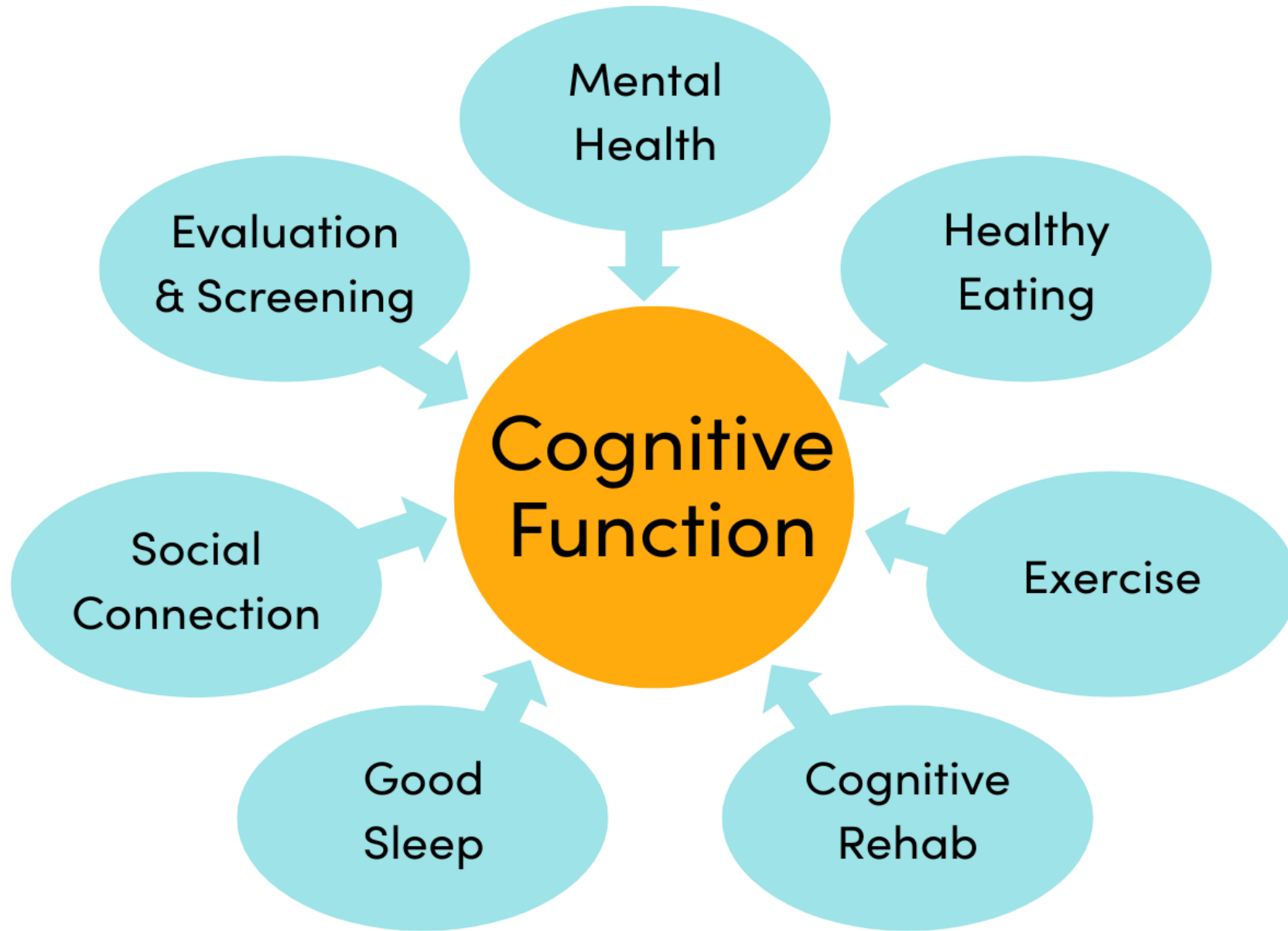
Risk Factors for Cognitive Impairment in MS

Risk factors are mostly things we cannot change:

- genetic susceptibility
- older age at MS onset
- higher EDSS scores (overall disability due to MS)
- lower physical activity in childhood
- lower baseline global cognitive abilities
- *lower educational level*
- ****co-occurring mood or anxiety disorder****



Factors That Can Promote Healthy Brain Function



Get good sleep

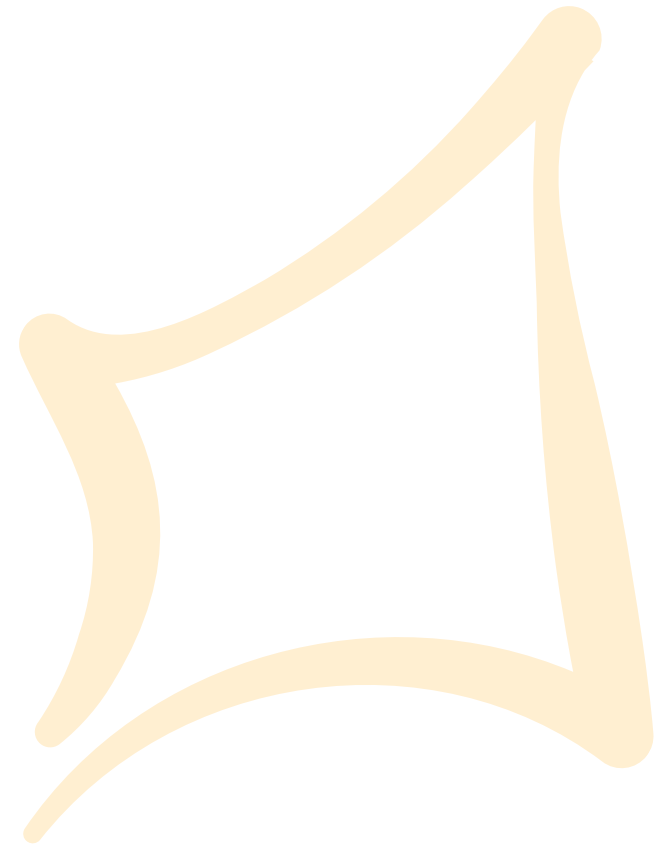
- Aim for 7–9 hours per night
- Practice good sleep hygiene
- Take short naps if needed
- Manage fatigue
- Treat any identified sleep disorder

Avoid or minimize marijuana

- Can worsen cognitive functions for pwMS

Avoid or minimize cigarette smoking

- Linked to worse cognitive outcomes, especially processing speed
- Has also been linked to increased brain atrophy and total lesions



Get regular exercise

- Do aerobic activities like walking, cycling, swimming, or using adapted equipment
- Adding Tai chi, Pilates, yoga, or dance may also help you work on balance and coordination
- Ask your Primary Care Provider or Neurology Provider for a referral to PT to help you design an exercise plan



The goal is to do these activities on 2-3 days of the week, up to 40 minutes at a moderate intensity.

Seek intellectual and social engagement



- Intellectual activities
 - Reading
 - Crossword puzzles
 - Gardening
 - Playing cards/board games
- Taking or auditing classes at a local college to learn something new.
- Social activities
 - Talking to friends and family
 - Attending activities together
 - Engaging in community activities

- *Mediterranean Diet or Mediterranean-DASH Intervention for Neurodegenerative Delay (MIND) Diet*
- Foods rich in antioxidants
 - ✓ Berries and other fruits such as apple and mango
 - ✓ Vegetables
 - ✓ Spices such as turmeric, cinnamon, and cloves
 - ✓ Red and kidney beans
- Foods high in omega-3 fatty acids
 - ✓ Fatty fish such as salmon, mackerel, sardines, herring
 - ✓ Nuts and seeds such as flaxseeds, chia seeds, hemp seeds, walnuts





Medication side effects

- Check with your healthcare provider
- Certain medications can cause cognitive side effects, either alone or when in combination with other medications

Mood and anxiety symptoms

- People living with MS are more likely to have anxiety and/or depression
- There are effective treatment options

Chronic pain

- Talk to your healthcare provider about treatment options
- 

How To Manage Cognitive Symptoms

- Disease-modifying therapies
- Compensatory strategies – done with a rehabilitation professional and tailored to the individual
- Use of widely available but not tailored options such as BrainHQ
- Stimulant medications – ask your provider, this may not be appropriate for all individuals, and some providers may not feel comfortable prescribing them
- Address any risk factor you can control (such as cutting down on cigarettes, working on getting better sleep)
- Incorporate things that promote healthy brain function, such as doing intellectually stimulating tasks and treating mood and/or anxiety symptoms



Q+A



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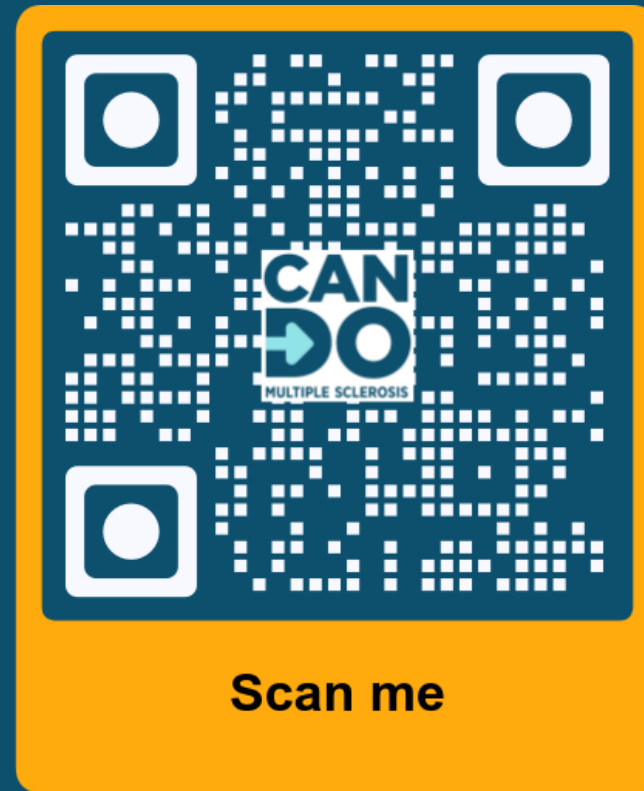


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04.08.2026

Next Month:

How Does Aging Affect My MS and Vice Versa?

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