



WEBINAR 
WEDNESDAYS

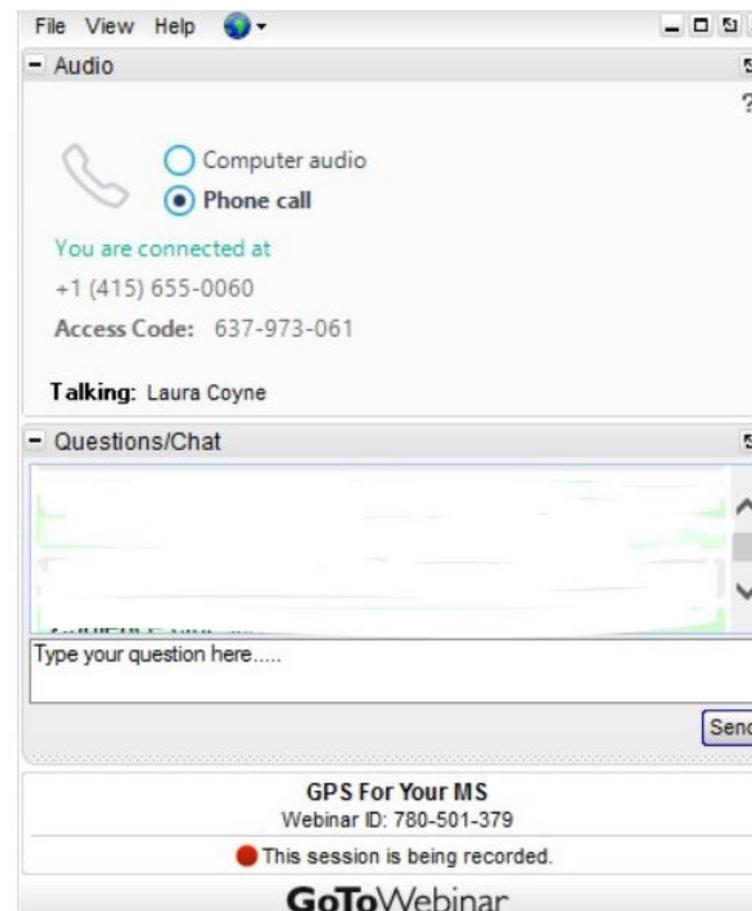
How to Stay Steady When Sensory Symptoms Throw You Off Balance

SPONSORED BY:



How to Ask Questions During the Webinar

Type in your questions using the **Questions/Chat** box



Augusto Miravalle, MD



Neurologist
Fort Collins, CO

Mandy Rohrig, PT, DPT, MSCS



Physical Therapist
Elmwood, NE

Learning Objectives

1

Assess personal fall risk and factors that challenge balance

2

Learn strategies to optimize balance

3

Recognize how balance problems can impact family members

Overview of Sensory Symptoms

Relapses versus Pseudo relapses

Overheating

Falls

How sensory symptoms impact
balance and gait

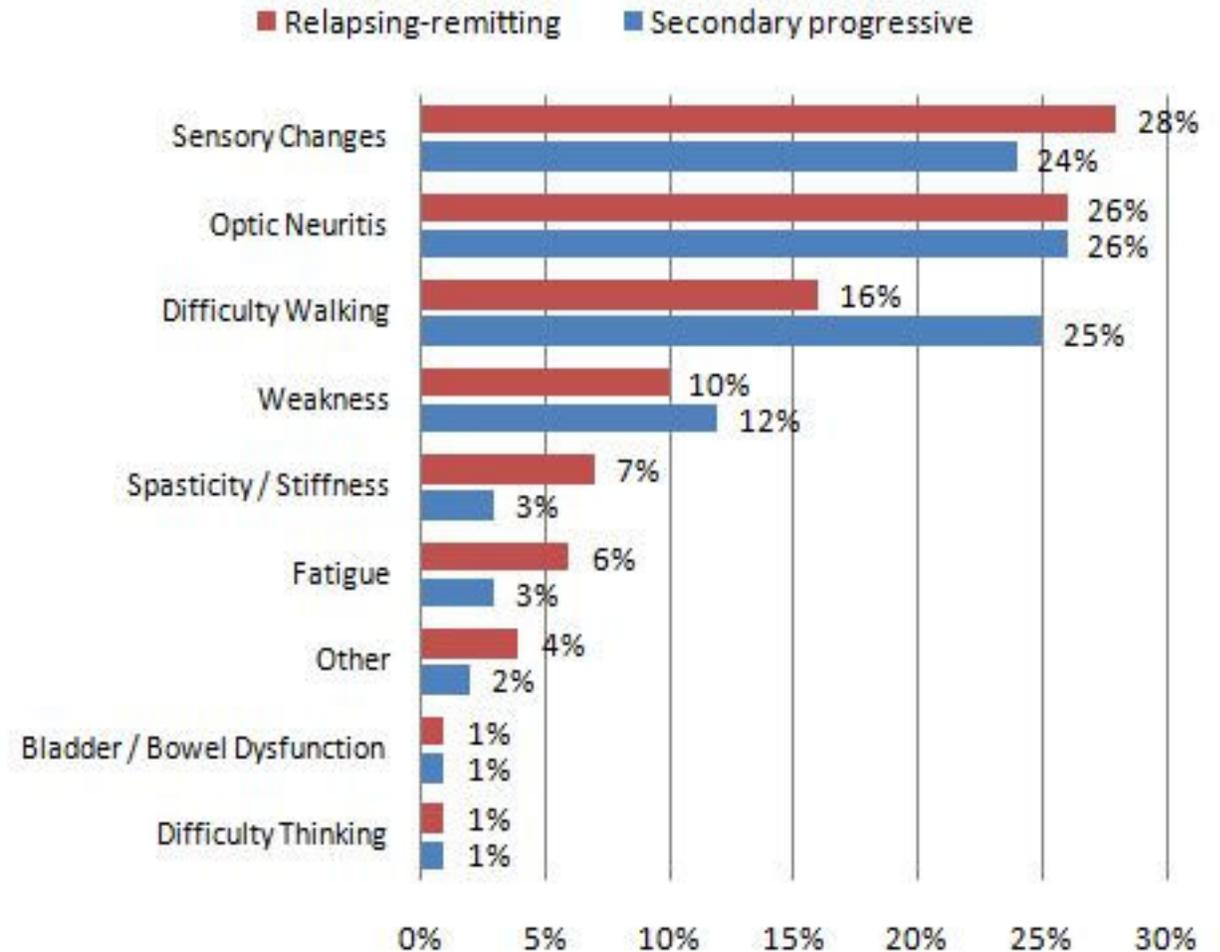
Relapses

- Symptoms + Signs
- More than 24 hours
- Deficits
- Absence of Infection

Pseudo Relapses

- Symptoms > Signs
- Less than 24 hours
- Often associated with infections, heat, menses, stress
- Symptoms improve when the trigger is resolved

Distribution of First MS Symptoms for two Types of MS



Temperature Sensitivity in MS

Highly prevalent (60–80%)

Pseudo Relapses

- Temporary worsening of neurological symptoms often associated with underlying processes
 - Infections, heat, menstruation, stress, etc.
- Symptoms often improve when the trigger is resolved.

Cool Tips:

- When outdoors, find a shady area to rest or head indoors to a fan or air conditioning
- Hydrate with cool water
- Take a cool bath or shower
- Apply a cold compressor ice pack to your neck, wrists, and feet
- Have a cooling vest or scarf handy for when you may be in a hot area

Conversation Starters: Balance Challenges

My vision shakes; it's like watching a bad home movie"

" I have to look at my feet when I am walking"

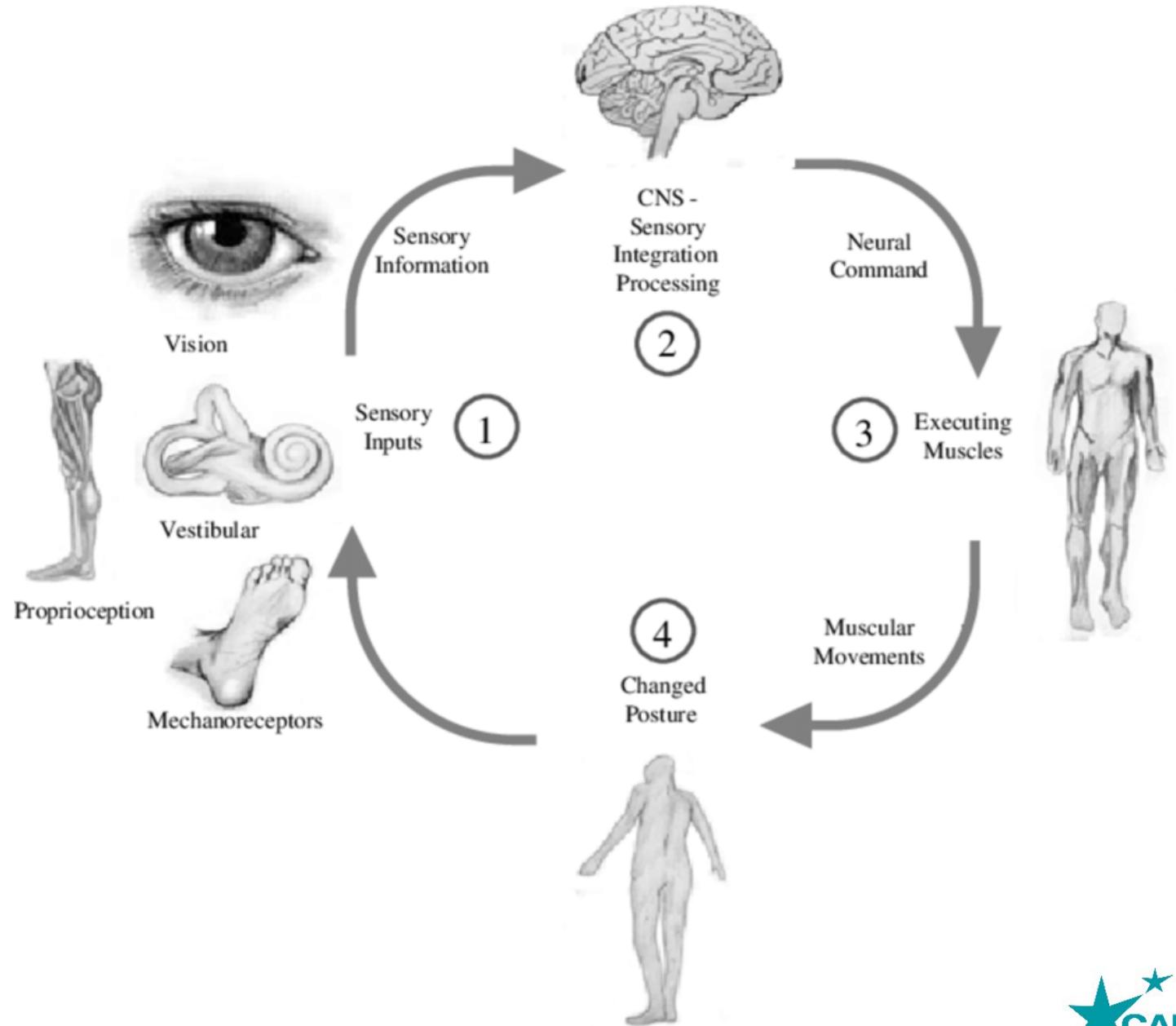
"As long as I focus on something, I can keep my balance"

" I feel dizzy and off balance when I am shopping, especially in a grocery store"

"I feel off balance when I walk in grass"

"I lose my balance when walk in the dark at night to use bathroom"

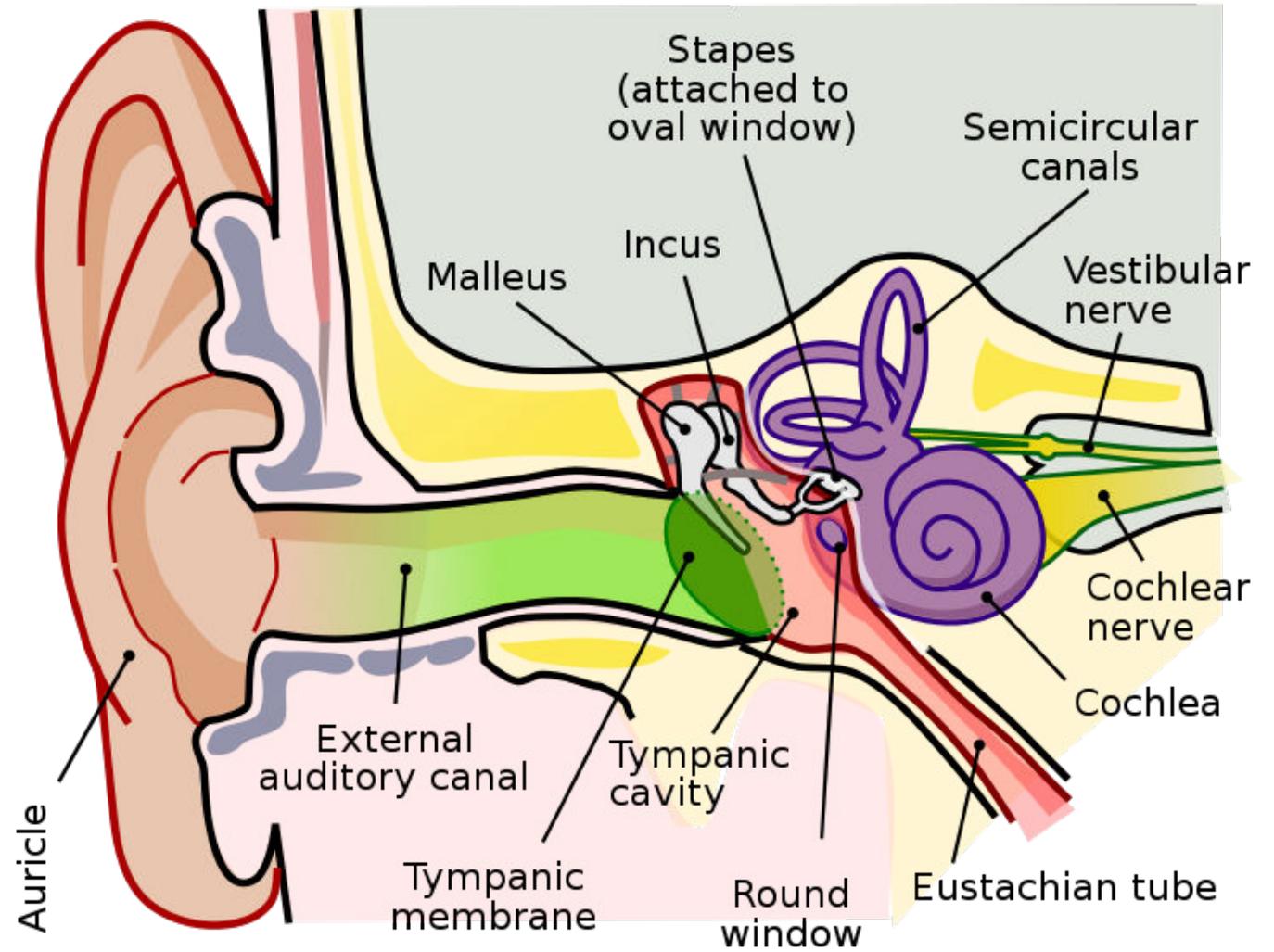
How Sensation Impacts Balance:



Visual Symptoms, Causes, & Impact

Characteristic	Likely Cause	Potential Impact on Balance	You May Say and Feel...
Visual Acuity	Optic neuritis Age-related eye conditions	Difficulty seeing, anticipating, reacting to environment Incomplete visual field	"My vision isn't so sharp anymore"
Double Vision	Decreased nerve conduction of the muscles that control eye movements Brainstem lesions	Inability to focus Slowed movements	"I have blurred vision" "If I close one eye I can see clearly"

The Vestibular System



Vestibular Symptoms, Causes, & Impact

Characteristic	Cause	Potential Impact on Balance	You may say and feel...
Gaze Instability - Oscillopsia - Nystagmus	Lesion in vestibular system pathways or cerebellum or inner ear	Dizziness Difficulty focusing Challenges in dynamic environments with visual movement (i.e. crowds), turning head and/or body, reading, etc.	“I feel dizzy and off balance when I am shopping, especially in a grocery store” “Watching an action movie with lots of fast movements, makes me feel off balance”

Sensation Symptoms, Causes & Impact

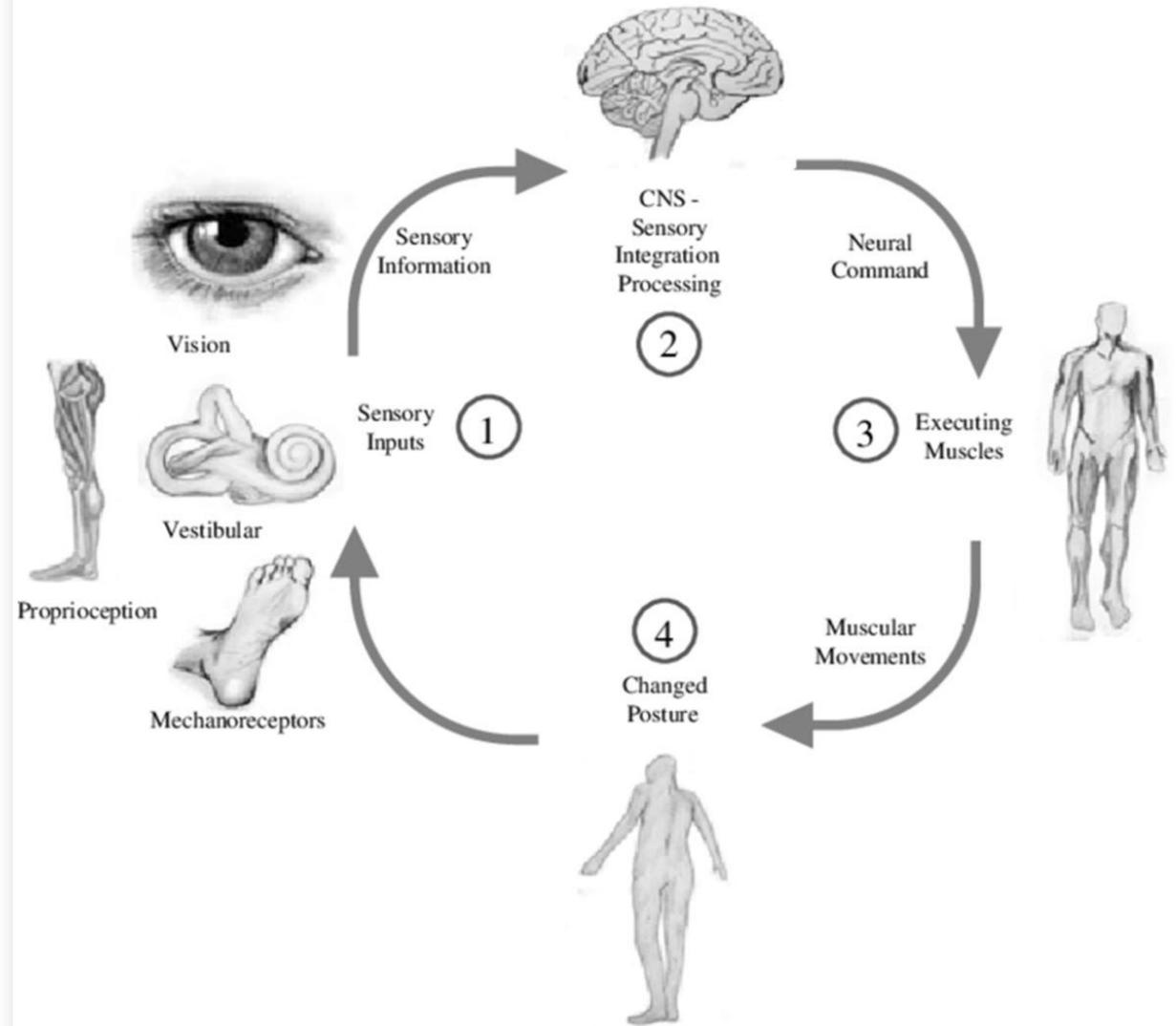
Characteristic	Cause	Potential Impact on Balance	You May Say and Feel...
Numbness/tingling	Demyelination	Unable to feel changes in surfaces	"My partner says I shuffle my feet" "I can't feel my feet well"
Loss of position/orientation (proprioception)	Demyelination	Challenges with walking in dark/dim light or uneven surfaces	"I have to look down at my feet when I am walking"
Pain	Lesions	Avoidance pain movement patterns Changes in base of support	"I lean forward on my walker because my back hurts"

Balance Optimization:

Sensory Input Affects Motor Output



Motor Output Affects Sensory Input



What You *CAN Do* to Help Your Balance

Balance Exercises

Sitting, standing, and walking activities that are consistent with changes to sensory input (i.e. eyes open/closed, varying surfaces)

Strengthening Exercises

Examples: Strengthening of hips, core, and ankle muscles

Flexibility Exercises

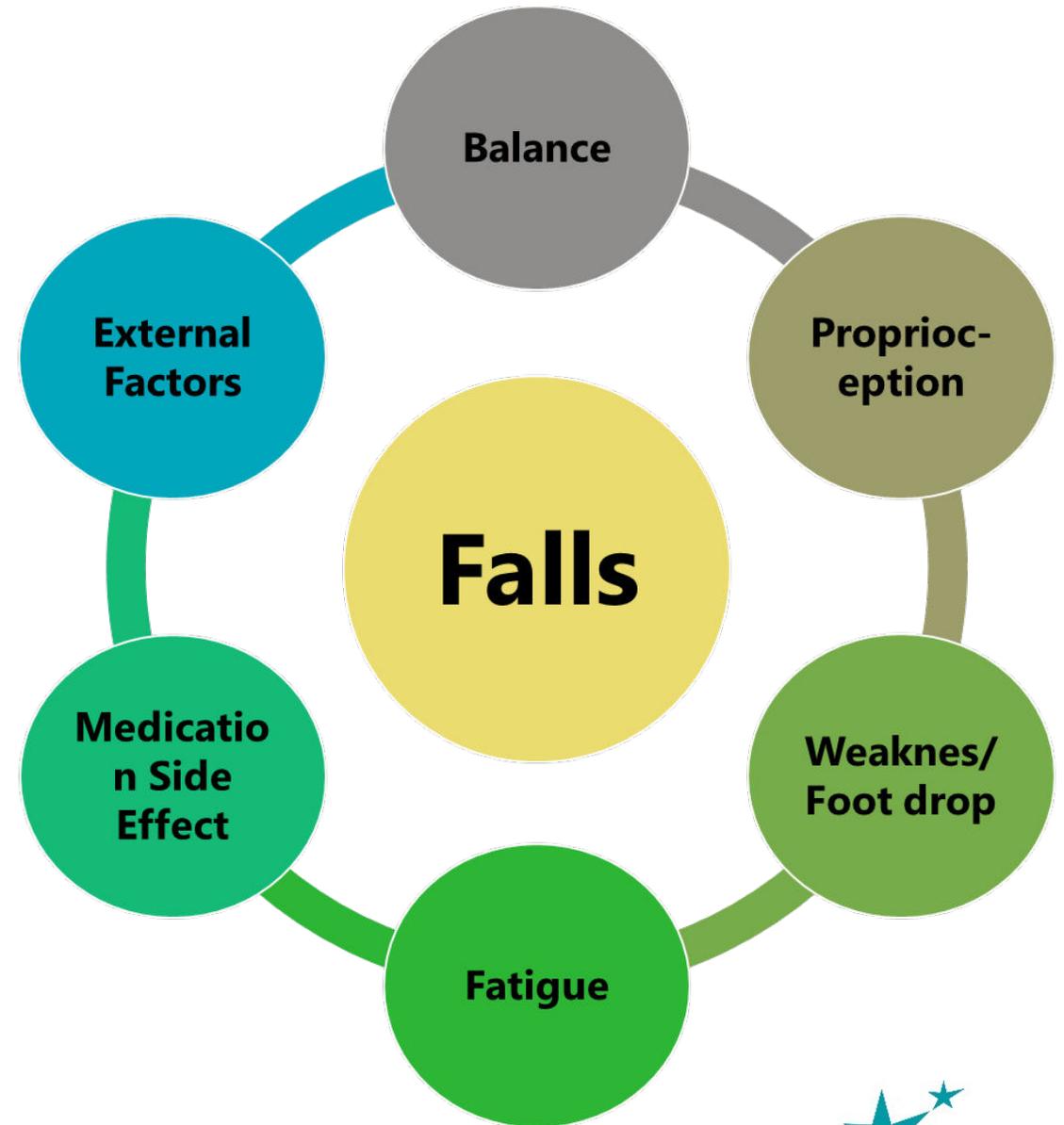
Examples: Flexibility of calf and hip muscles

Vestibular Exercises

Focus: Vestibular ocular reflex

Falls in MS

- Occur in more than **50% of MS patients**, similar to that in adults older than 80 years
- A single fall in the past 12 months has an **82% probability** of falling again in the following 6 months
- Falls can have significant physical, social, and psychological consequences for the individual *and* family





Apply Your Knowledge

Scenario 1

- 45-year-old woman with MS
- Inside a lot through pandemic
- Depressed and isolated
- Feels numbness is getting worse, difficulty walking, increased falls
- However, exam is unchanged
- Slower, shuffling walk and finds herself looking at her feet to stay balanced

Poll

Which sensory symptom is most likely affecting her balance:

- a) Vision
- b) Vestibular
- c) Sensation (proprioception) of the legs

Exercise and Brain Health

Pre-habilitation

VS

Rehabilitation

Prevention

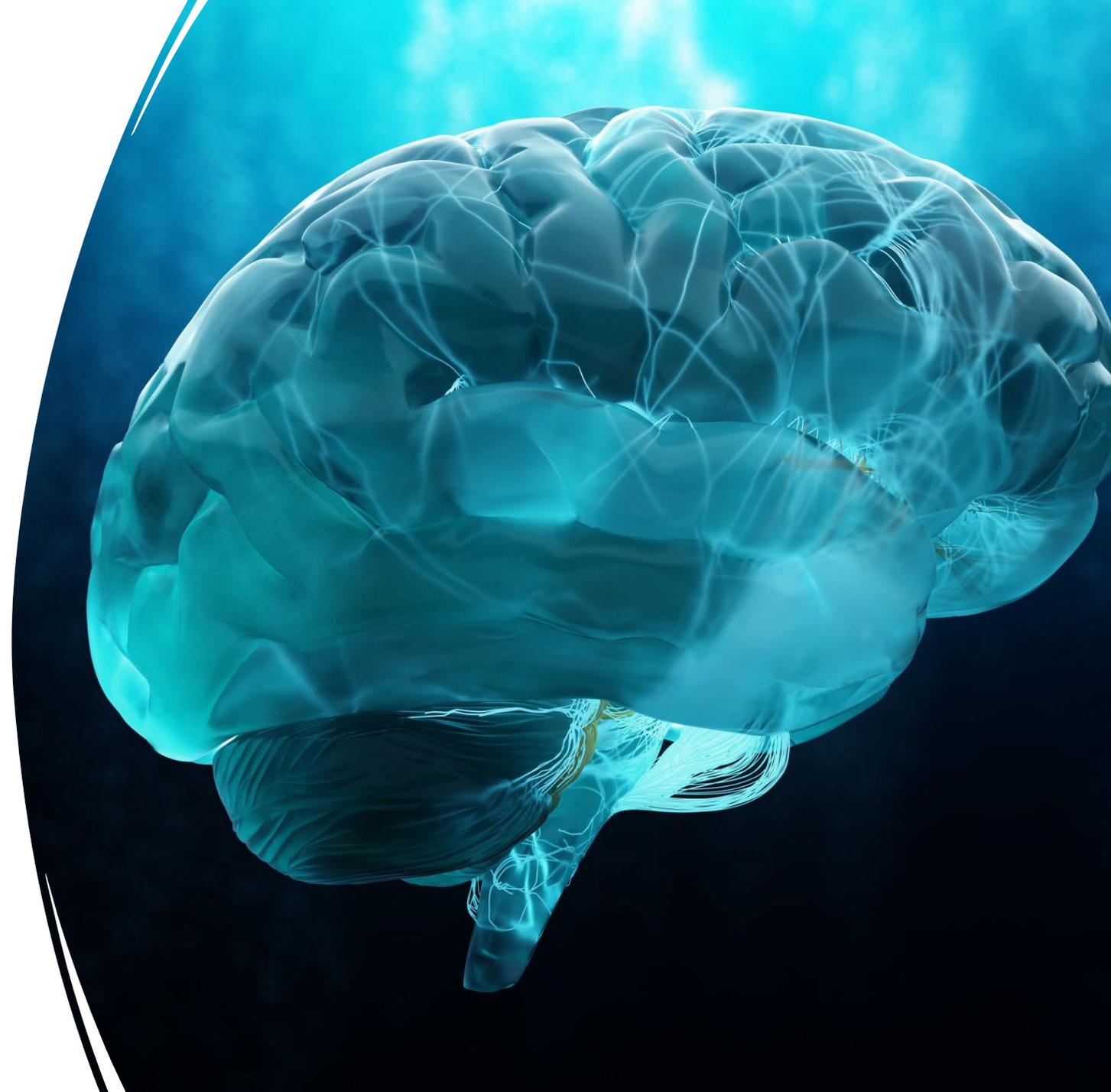
VS

Treatment

Building Reserve Capacity

VS

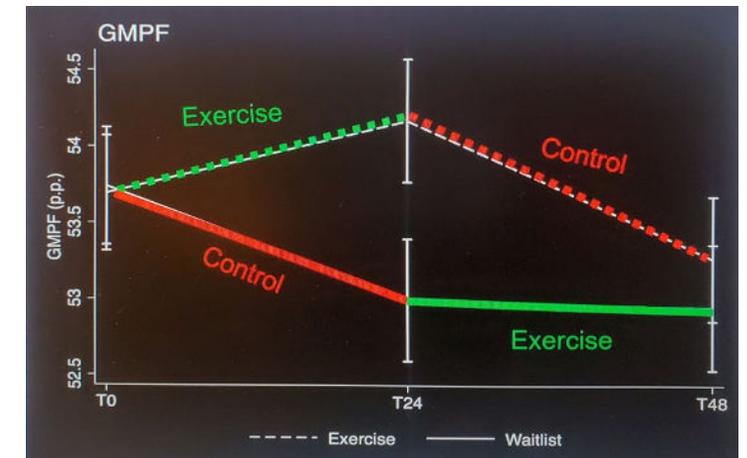
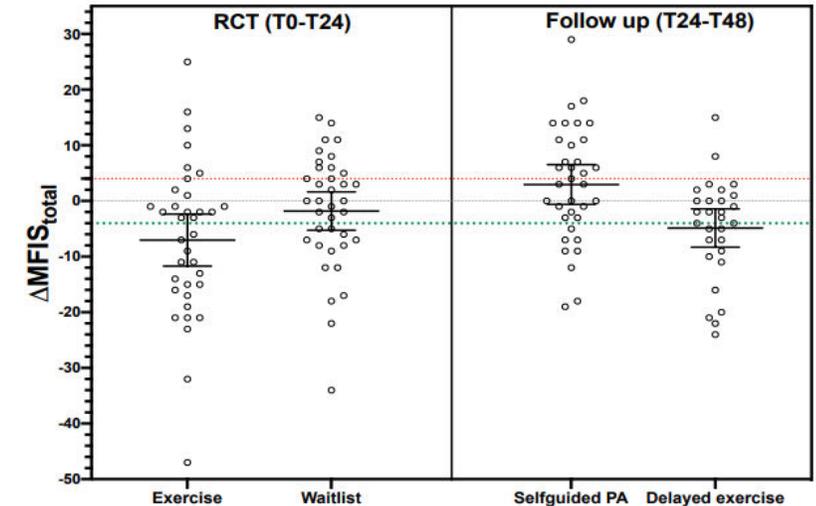
Restoring Capacity



Exercise as Medicine

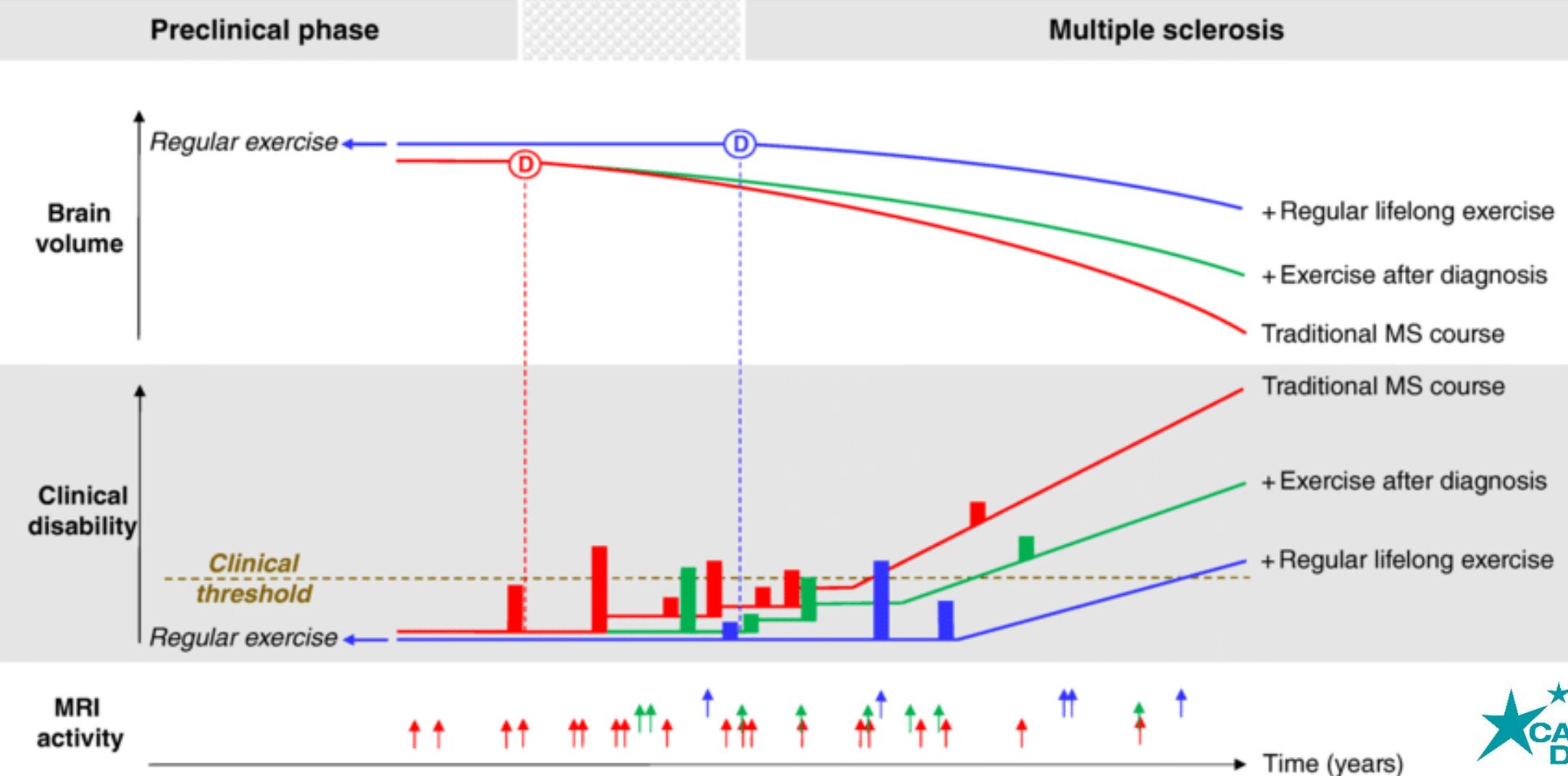
A study of 86 mildly to severely impaired individuals with MS compared progressive aerobic activity and self-guided exercise.

- **Results showed improvements in:**
 - Fatigue (MFIS)
 - Cardiorespiratory Fitness (VO₂max)
 - 6-Minute Walking Test (6MWT)



Symptom	MS vs Non-MS	General Exercise	Aerobic Training	Resistance Training	Yoga and Pilates
Fatigue	↑	↓	↓	→	↓ OR →
Pain	↑	↓	→		↓
Depression	↑	↓	↓	↓	↓ OR →
Function	↓	↑	↑	↑ OR →	→
Balance	↓	↑	→	↑ OR →	↑
Cognition	↓	→			→
Muscle Strength	↓	↑	↑ OR →	↑	↑
Cardiorespiratory Fitness	↓	↑	↑	→	
Relapse Rate	↑	↓			
Disease Progression	↑	→		→	
Quality of Life	↓	↑	↑	→	→

Theoretical Model





Apply Your Knowledge

Scenario 2

- 55-year-old-man with MS
- He increasingly struggles standing in the kitchen to help with meal preparation
- His support partner is concerned about him falling and MS progression as he seems to “wilt” if he stands too long

Poll

Which sensory symptom is most likely affecting his balance?

- a) Vision
- b) Vestibular
- c) Sensation (proprioception) in legs
- d) Heat sensitivity

Poll

After this Webinar, what will you do to help manage your sensory symptoms and mobility?

- a) Digest all this new information!
- b) Discuss my balance challenges with my doctor
- c) Explore new exercises or assistive devices with my physical therapist
- d) Other (put it in the chat box!)

Q & A



UPCOMING PROGRAMS

BLACK COMMUNITY TAKE CHARGE

This program is designed to uplift, foster connection, and help with the unique challenges of the black community

July 22 - 23

VETERANS TAKE CHARGE

This program is designed for Veterans with MS to find friendship, support, and a fresh start

September 16 - 17

FINDING SUPPORT AS A SUPPORT PARTNER

4-Part Coaching Series for Support Partners

Starting Thursday, July 28

CanDo-MS.org



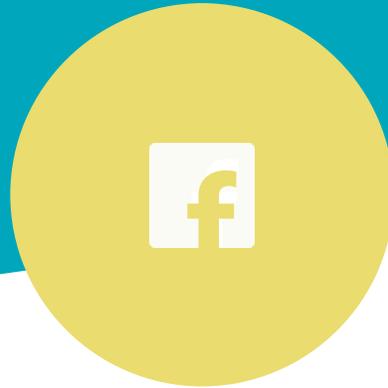


Connect With Us



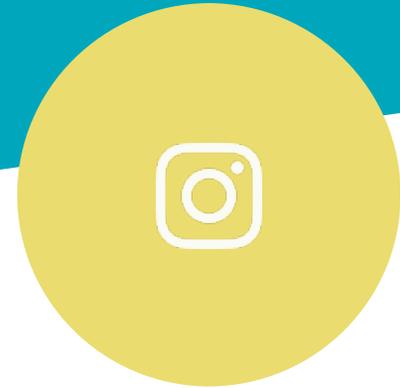
Twitter

[@CanDoMS](#)



Facebook

[@CanDoMultipleSclerosis](#)



Instagram

[@CanDoMultipleSclerosis](#)





WEBINAR 
WEDNESDAYS

How to Make Daily Life Easier With MS

Wednesday, August 3 at 8pm ET

SPONSORED BY:



The preceding program is copyrighted by Can Do Multiple Sclerosis. It is provided for your personal educational and referential use only. Any repurposing or dissemination of its content requires the consent by Can Do Multiple Sclerosis.

© Can Do Multiple Sclerosis