

Occupational Therapy For People With Multiple Sclerosis



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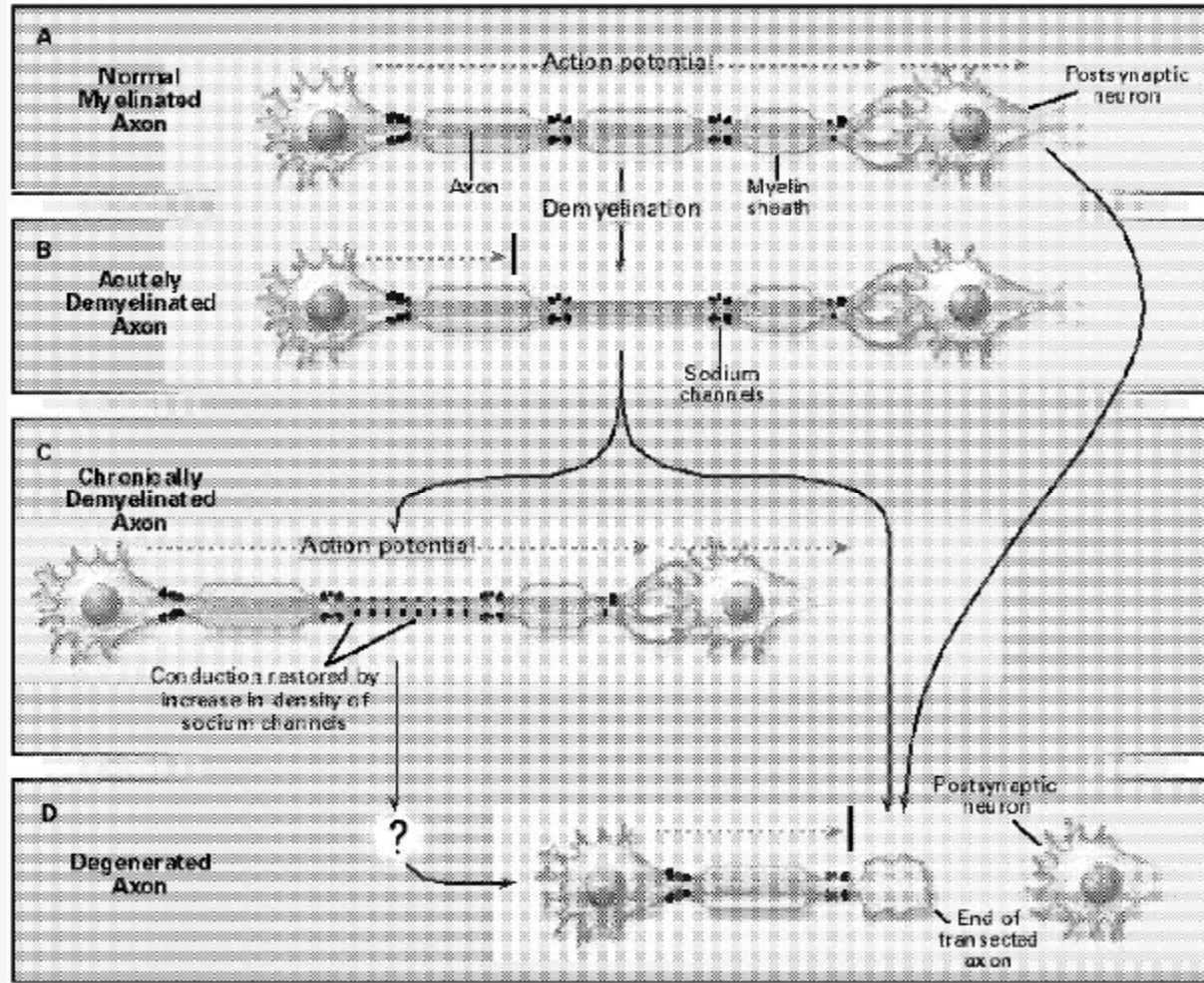
Multiple Sclerosis

- MS is the most commonly diagnosed neurological disease that can cause disability in young adults
 - It is almost **twice** as common in women as in men
 - It has a peak incidence between the ages of 25 and 35 years
 - The cause of MS remains unknown:
 - An environmental trigger initiates the autoimmune response in people with genetic susceptibility
 - The **multiple** in multiple sclerosis refers to both time and location
 - The **sclerosis** refers to the hardened or sclerotic plaques that are the scar tissue resulting from autoimmune attacks on the CNS (axons and myelin covering)
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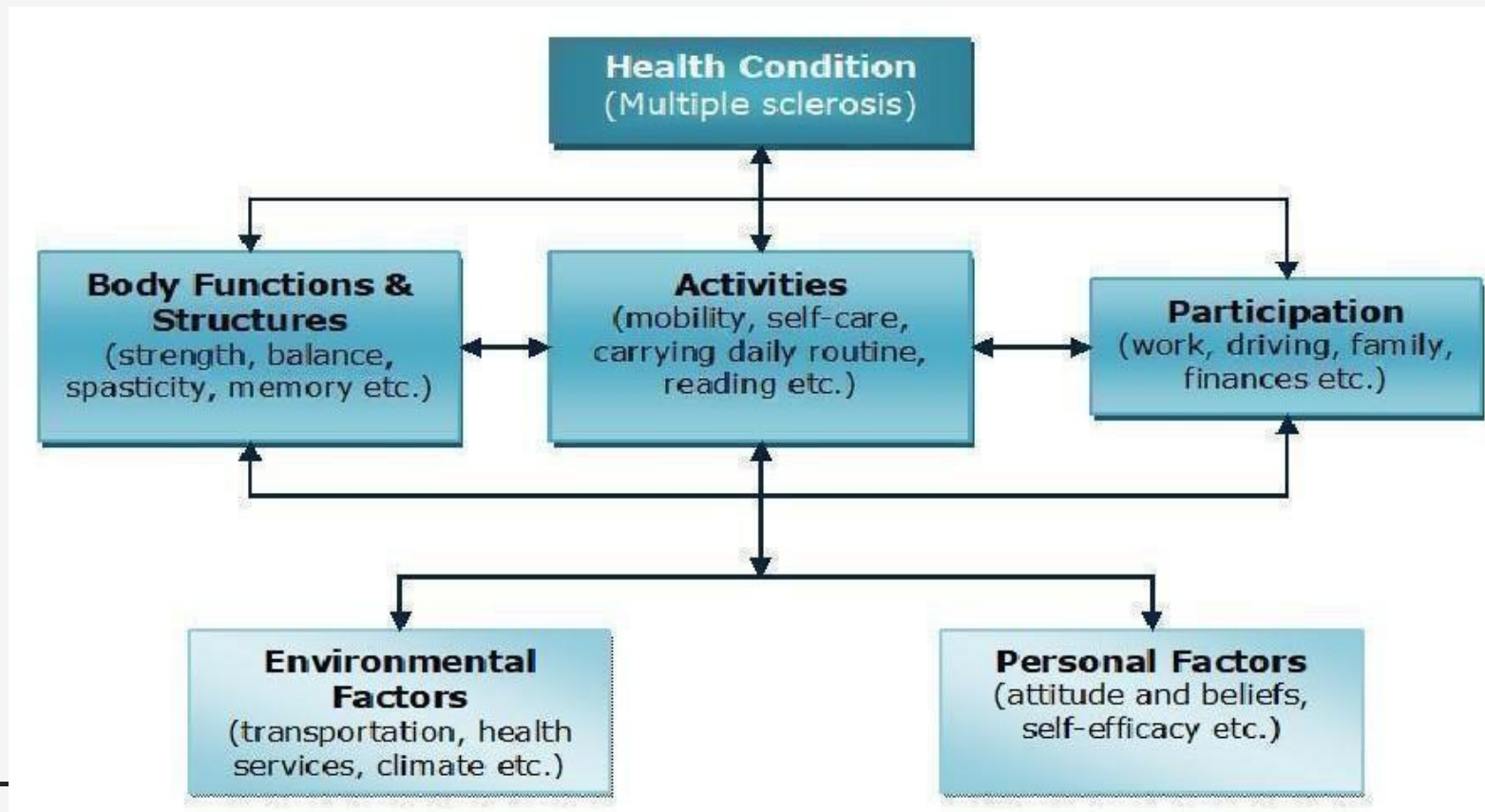
Multiple Sclerosis

MS is a **chronic, immune-mediated** disease of the **central nervous system** (brain, spinal cord and optic tracts) that is characterized in the majority of people by **relapses** (also known as exacerbations) and **remissions** of neurological **symptoms**, and **variable progression** of disability over time. In addition to relapsing forms of MS, a small subset of people have a disease course that is **progressive from onset** – with few or no clinical relapses over time (known as primary progressive MS).

Multiple Sclerosis



Multiple Sclerosis and ICF



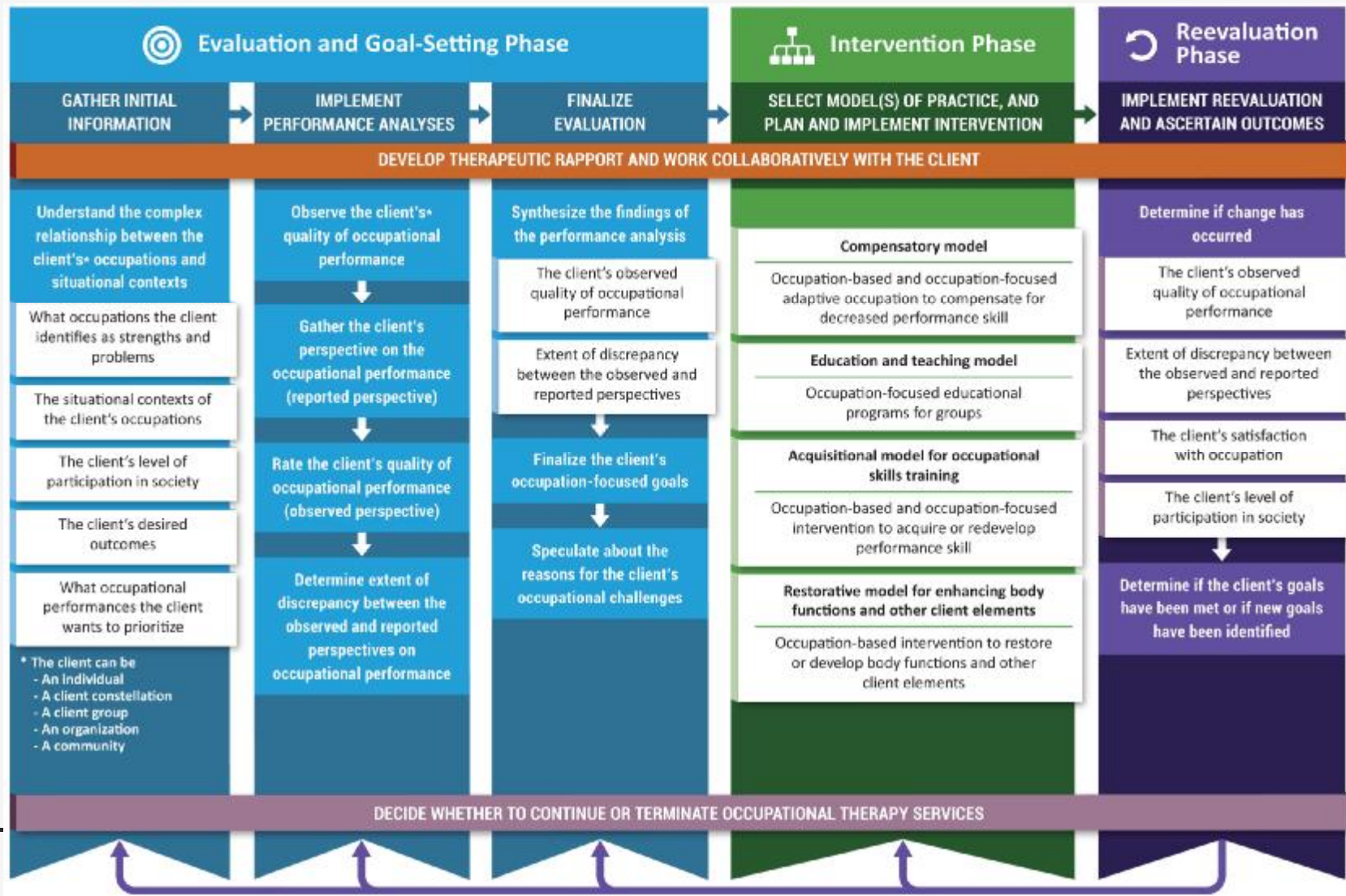
Multiple Sclerosis Symptoms

Lesion Site	Clinical Symptoms
Cerebrum; cortex	<ul style="list-style-type: none">• Cognitive deficits• Psychiatric features• Hemiparesis, monoparesis, paraparesis, quadriparesis• Motor impairments, spasticity
Optic nerve	<ul style="list-style-type: none">• Optic neuritis
Cerebellum	<ul style="list-style-type: none">• Postural and action tremor• Limb incoordination• Gait instability• Ataxia
Brainstem	<ul style="list-style-type: none">• Diplopia• Vertigo• Impaired speech and swallowing• Paroxysmal symptoms
Spinal cord	<ul style="list-style-type: none">• Weakness• Spasticity• Diminished dexterity• Autonomic disturbances (sexual, bladder, bowel)• Pain• Nerve disorders/neuropathic pain
Other	<ul style="list-style-type: none">• Fatigue• Temperature sensitivity

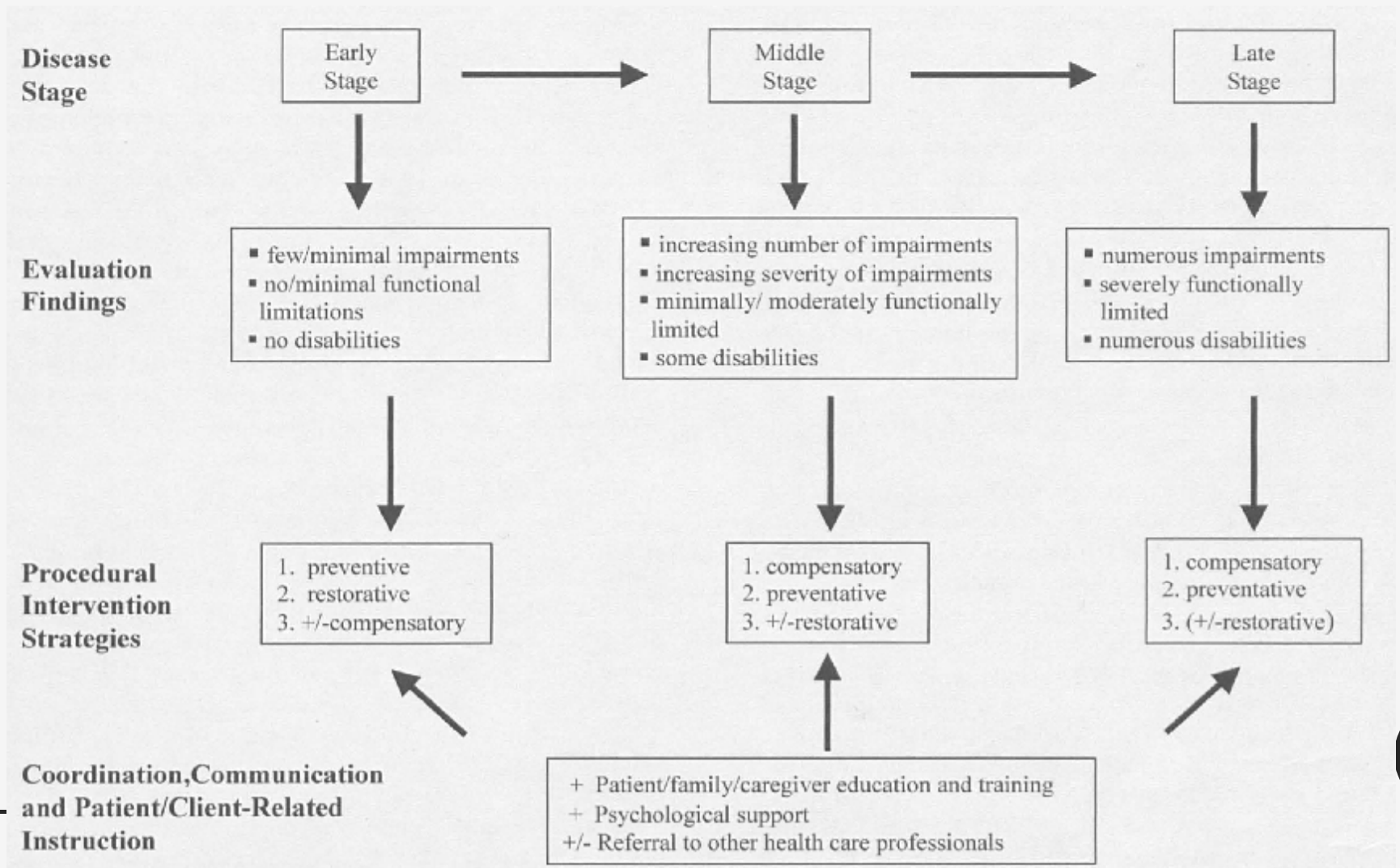
Multiple Sclerosis Symptoms

Symptom	Primary	Secondary	Tertiary
Weakness	X	X	
Sensory loss	X		
Vision loss	X		
Diplopia	X		
Impaired balance	X	X	
Incoordination	X		
Sexual dysfunction	X	X	X
Bladder symptoms	X	X	
Bowel issues	X	X	
Cognitive dysfunction	X	X	X
Fatigue	X	X	X
Depression	X	X	X
Anxiety	X	X	X
Social isolation		X	X
INO/nystagmus	X		
Contractures		X	
Vertigo	X		
Speech issues	X		
Swallow issues	X		
Pain	X	X	X
Spasticity	X	X	

Occupational Therapy and MS



A Framework for Intervention



Symptoms and recommended interventions

Symptom	Description	Rehabilitation Strategy
Fatigue	<ul style="list-style-type: none">• “A subjective lack of physical and/or mental energy that is perceived by the individual or caregiver to interfere with usual and desired activities”⁸• The most common MS symptom• Includes physical lassitude, deconditioning, sleep difficulties, pain, depression, other• May be secondary to effects of medications	<ul style="list-style-type: none">• Exercise• Energy conservation• Physical therapy• Use of assistive devices• Cooling techniques• Inpatient rehabilitation⁹• Task analysis and modification• Gait training⁹• Rule out depression• Screen for sleep apnea

Symptoms and recommended interventions

Symptom	Description	Rehabilitation Strategy
Pain	<ul style="list-style-type: none">• A common symptom of MS• Complex, multifactorial, sensory phenomenon• Includes extremity pain, Lhermitte's sign, trigeminal neuralgia, tonic spasms, low back pain, muscle spasms, headache¹⁰	<ul style="list-style-type: none">• Range of motion exercise• Stretching for spasticity• Massage• CAM• Cooling• Guided imagery• Chronic pain management program• TENS• Assess and treat musculoskeletal impairments

Symptoms and recommended interventions

Symptom	Description	Rehabilitation Strategy
Cognitive impairment	<ul style="list-style-type: none">• Includes processing speed, attention, memory, executive functioning, visuospatial reasoning, verbal fluency^{4,11}	<ul style="list-style-type: none">• Cognitive rehabilitation^{12,14}• Compensatory strategies• Exercise⁴• Safety• Medication management• Financial management, job modification, etc• Rule out effect of depression on attention and concentration• Address sleep habits

Symptoms and recommended interventions

Symptom

Description

Rehabilitation Strategy

Sensory disturbances

- May include pins-and-needles sensations, tingling, numbness, heavy feeling in the extremities, burning, tightness, crawling skin sensation

- Safety
- Task modification
- Assistive devices
- Hippotherapy^{9,18}



Symptoms and recommended interventions

Symptom

Description

Rehabilitation Strategy

Spasticity

- Velocity-dependent resistance to muscle stretch
- Stiffness and spasms are common in quadriceps, hamstrings, gastrocnemius muscles
- May worsen during an exacerbation, underlying infection, and with noxious stimuli

- Avoid secondary complications, prevent or treat contractures, improve posture, maximize function
- Stretching, exercise, and mechanical aids
- Orthotic devices
- Evaluate for pain
- Relaxation techniques
- Hippotherapy^{9,18}
- Training to understand the adverse effects of medications recommended for spasticity

Symptoms and recommended interventions

Symptom

Description

Rehabilitation Strategy

Tremor

- Less common symptom
- Primary symptom caused by MS lesions in the cerebellum and its pathways
- Can affect head, limbs, trunk, eye movements, and speech
- Titubation

- Proximal stability, self-care strategies, weightbearing activities, weighting, coordination exercises



Symptoms and recommended interventions

Symptom

Description

Rehabilitation Strategy

Coordination
(ataxia)

- Less common symptom
- Disorganized, unsteady, or inaccurate movements⁶

- Challenging balance exercises
- Practice in complex tasks
- Light weighting of trunk or extremities



Symptoms and recommended interventions

Symptom

Description

Rehabilitation Strategy

Weakness

- Common symptom
- Loss of strength in a muscle or group of muscles⁶
- Can be in limbs, trunk, or respiratory muscles

- Strengthening programs (aerobic and resistance training), compensatory skills
- Task modification
- Task-specific training
- Hippotherapy^{9,18}

Symptoms and recommended interventions

Symptom	Description	Rehabilitation Strategy
Ambulatory dysfunction	<ul style="list-style-type: none">• Common symptom• Movement impairment or difficulty walking⁶	<ul style="list-style-type: none">• Assistive devices, orthoses, adaptive equipment including the use of functional electrical stimulation• Part and whole task training• Core strengthening• Exercise

Symptoms and recommended interventions

Symptom

Description

Rehabilitation Strategy

Balance

- Common symptom
- Balance is needed to accomplish coordinated movement when standing, sitting, or lying down
- Balance involves the cerebellum, eyes, ears, nerves of the arms and legs⁶

- Evaluate for vestibular dysfunction
- Gait and balance training
- Orthoses if needed
- Safety
- Exercise⁹
- Hippotherapy^{9,18}



Any Question?

