



National
Multiple Sclerosis
Society

Symptom/ Condition	Impact On Movement	Suggested Exercises	Special Considerations
Fatigue	Decline in energy levels; Peaked level of fatigue commonly reached by midafternoon.	Cardio exercises which stay at lower end of target heart range of 45%-60% (i.e. swimming, walking, stationary bike, etc.) mild interval training, muscle conditioning slow stretches, yoga postures.	Advisable to encourage clients to eat small portion of food before exercise session to increase energy. Allow for resting periods Monitor duration & intensity of exercise. Utilize Perceived Exertion Scale of 1-10 with clients (3-5) being an appropriate range.
Heat Sensitivity	Heat & humidity can lead to fatigue, decreased energy levels, loss of balance, and visual changes. May result in a pseudo-exacerbation.	Indoor activities, aquatics/water aerobics. Add cooling device for land activities. Mild interval training.	Provide a cool environment. Be aware of early signs of heat-related problems. Allow for rest periods. Increase fluid intake to avoid dehydration. Drink cold water. Wear free-breathing fabrics and dress in layers that can be easily removed.



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Balance	Foot drop or dragging; may be related to muscle weakness. Foot may turn in while walking; spasticity may be contributing factor. Shuffling of foot while walking. Wobbling gait. Loss of balance leading to risk of falling.	Choose activities that provide support (i.e. aquatics, stationary bike, walking with adaptive device, wall or bar work, or using a supportive prop like a chair). Dynamic balance exercises-weight-shifting exercises, balancing on unstable surface (eyes open and closed), sitting on balance ball, tandem walking.	Provide surrounding support to prevent falls. Stand close to the client. Develop strength before working on balance exercises. Avoid sharp turning of the head and neck or closing of the eyes in order to prevent loss of balance. Work against a wall or corner. Consider having the student wear a strong belt so that there is something to grab on to if he/she loses his/her balance. Consider using a chair or dance barre to improve safety.
Ataxia (Coordination)	Staggered gait: appearance of client to be drugged or drunken. Drop foot, circumducted hip during swing phase (one must swing the leg around to clear the ground).	Choose activities that provide support (i.e. aquatics, stationary bike, walking with adaptive device, wall or bar work, or using a supportive prop like a chair). Strength & conditioning exercises. Balance exercises. Walking in a straight line. Fine motor exercises.	Provide surrounding support to prevent falls. Monitor for fatigue. Provide extra assistance as client performs movement. Avoid sharp turning of the head and neck or closing of the eyes in order to prevent loss of balance.



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Spasticity	Most common in legs and postural muscles- causes muscles to lose their ability to interact with each other as in the case of muscle contraction and relaxation; causes muscle tightness and stiffness; contributes to mobility and gait imbalances: might be noted by foot turning in.	Any type of rotational stretch of the affected area. Choose supportive exercise such as stationary bike. Perform gentle rhythmic flexibility exercises. Focus on mobility and lengthening of tight areas.	Avoid quick forceful movement or stretching and move slowly through range of motion. Allow for rest periods. Perform gentle rhythmic flexibility exercises before static stretching. Avoid excessive plantar flexion for increased duration. Utilize toe clips and heel straps for foot stability.
Contracture	Static muscle shortening due to spasms. Can cause loss of mobility, balance and muscle paralysis	Rotational movement around the contracture. Gentle, slow flexibility exercises before static stretching. Supported balancing exercises.	No over-stretching. Avoid quick forceful movements. Assisted stretching. Helping clients to move through full range of motion. Do not force the stretch.
Paresthesia	Numbness & tingling, creeping sensation of the skin.	Refer to health professional for evaluation and treatment. In many cases, does not cause real distress, but is more of a nuisance. Can typically engage in all modalities of exercise. Monitor duration & take breaks.	Modify intensity to avoid increase in tingling sensation- stop exercise if experienced. Monitor duration & take breaks.



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L'Hermitte's Sign	Uncomfortable electrical sensation/shock traveling down the spinal cord when head is bent forward (chin to chest). Pins & needles sensation in limbs.	Refer to MD for pain management therapy. Choose activities that maintain neck in neutral position.	Avoid neck flexion exercises. Avoid extreme forward or backward movement of the neck.
Vision Problems (Optic Neuritis)	Typically, blurred vision, that is temporary, double vision, sensitivity to bright light and florescent lighting. Heightens tension and fatigue.	Refer to health professional. Relaxation exercises- choose activities that provide support (i.e. aquatics, stationary bike, walking with adaptive device, wall or bar work, or using a supportive prop like a chair).	Mindful of environment. Keep exercise area well lit but not extremely bright. Keep working area clear of obstructions.
Incontinence	Students should empty bladder before exercise. May impact the intensity and duration of the exercise.	Add Kegel exercise pelvic tilt, wall slide and bridge (easier to contract when gluts are activated), abductor exercise (i.e. squeeze small medicine ball between thighs)- refer to medical professional.	Avoid dehydration if client is intentionally reducing water consumption. Allow for restroom breaks. May not be appropriate for aquatic activities. Encourage clients to continue different types of exercise training aside from aquatics.



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Tremor	Tremors may be random Can occur in various parts of the body.	Refer to PT for individual therapy. Adding weights to a limb during exercise may decrease a tremor, but must consult a PT for utilizing this modification.	Make sure to provide a safe environment. Modify balance exercises.
Cardiovascular Dysautonomia	Dysfunction of the autonomic nervous system causing possible problem with cardio- acceleration and reduction in blood pressure response.	Cardio exercises which stay at lower end of target heart range of 45%-60%. Work at lower intensity and duration.	Monitor for lightheaded and dizziness. Discontinue exercise if symptoms progress.

Adapted from Exercise and Multiple Sclerosis, Karl Knopf, EdD