

PHYSICAL THERAPY IN MS

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WHY PHYSICAL THERAPY?

- Physical therapists can teach patients how to prevent or manage their condition so that they will achieve long-term health benefits. PTs examine each individual and develop a plan, using treatment techniques to promote the ability to move, reduce pain, restore function, and prevent disability. In addition, PTs work with individuals to prevent the loss of mobility before it occurs by developing fitness- and wellness-oriented programs for healthier and more active lifestyles. - APTA

SPECIFIC TOOLS IN MS EVALUATION

- MS Functional Composite (MSFC), which includes the 25-foot walk
- Expanded Disability Status Scale (EDSS)—performed by trained physicians and nurse practitioners
- MS Fatigue Impact Scale (MSFIS)
- Disease Steps (DS)
- MS Walking Scale-12 (MSWS-12), a patient self-report measure

OTHER TESTS

- Berg Balance Scale
- Tinetti Gait and Balance Assessment
- Activities Specific Balance Confidence (ABC)
- Timed Up and Go (TUG)
- Dynamic Gait Index (DGI)
- Six Spot Step Test
- Functional Independence Measure (FIM)
- 2-minute walk, 6-minute walk
- Fatigue Severity Scale (FSS)

PHYSICAL THERAPY IN MS

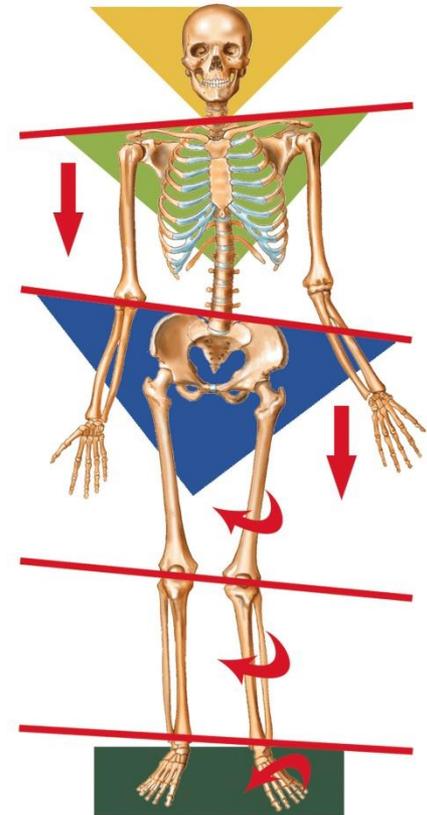
- Exercise Therapy
- Manual therapy
- Orthotics
- Adaptive management



EXERCISE THERAPY

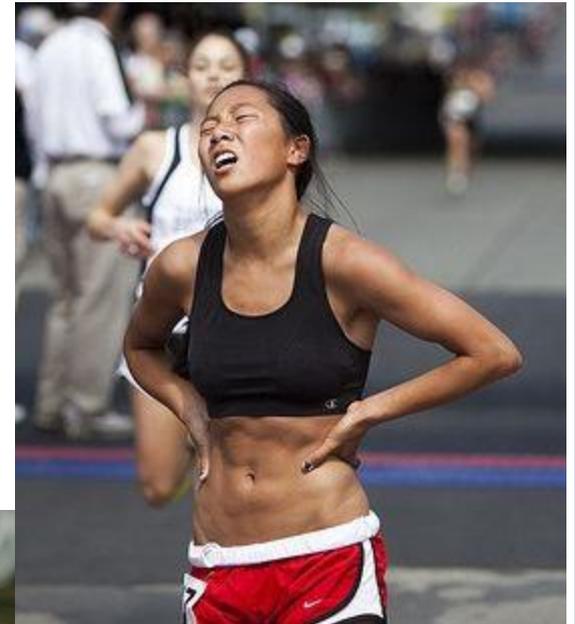
One size does not fit all

- Type of MS
- Severity of disease process
- Dysfunction
 - Joint pain
 - Balance
 - Functional mobility



EXERCISE PROGRAM YELLOW FLAGS

- Intensity
- Duration
- Fatigue
- Heat
- Co-morbidities



LOCATION OF AFFECTED NERVE FIBERS

Signs and symptoms of multiple sclerosis vary, depending on the location of affected nerve fibers

- Numbness or weakness in one or more limbs that typically occurs on one side of your body at a time, or the legs and trunk
- Partial or complete loss of vision, usually in one eye at a time, often with pain during eye movement
- Double vision or blurring of vision
- Tingling or pain in parts of your body
- Electric-shock sensations that occur with certain neck movements, especially bending the neck forward
- Tremor, lack of coordination or unsteady gait
- Slurred speech
- Fatigue
- Dizziness
- Problems with bowel and bladder function

THE NATIONAL CENTER ON PHYSICAL ACTIVITY AND DISABILITY

Balance and Coordination: As the disease progresses, balance and coordination can be a major problem and can lead to dangerous falls...

- Exercises with a Swiss Ball can help to increase flexibility and strength
- T'ai Chi can help maintain or improve strength, balance, and ROM
- Exercises in a pool are excellent for preventing injuries and falls
 - Water is supportive: flexibility, posture, muscle tone, and coordination can be improved



THE NATIONAL CENTER ON PHYSICAL ACTIVITY AND DISABILITY

Heat Sensitivity: Because of an impaired autonomic system, participants with MS are overly prone to overheating - to counter these problems...

- Exercise should exclusively be performed in cool environments (some leg ergometers with a fan mechanism, i.e., the Schwinn Air-Dyne, can be an excellent cooling device)
- Proper clothing must be worn
- Swimming or aqua exercises in a water temperature at or below 82° F are great
- Participant must drink plenty of water and can also soak in a cooling bath 20-30 min before and after exercise

(Petajan & White, 1999). NCPAD website



EXERCISE THERAPY FOR MS

COCHRANE REVIEW

- Review by Reitberg MB, Brooks D, Uitedhaag BMJ, Kwakkel G - **Exercise Therapy for Multiple Sclerosis** - Cochrane Database of systemic reviews 2004, Issue 3, Art No. CD003980
- 9 randomized controlled trials were selected
- Best evidence synthesis showed strong evidence in favor of exercise therapy compared to no exercise therapy in terms of muscle power function, exercise tolerance function and mobility related activities

EXERCISE THERAPY FOR MS (CONT.)

- Moderate evidence was found for improving mood
- No evidence was found that a specific exercise therapy programs was more successful in improving activities and participation than other exercise treatments



EXERCISE THERAPY FOR MS (CONT.)

- No evidence was found of deleterious effects of exercise therapy
- No evidence was found for exercise therapy on fatigue and perception of handicap when compared to no exercise therapy group

CANADIAN PHYSICAL THERAPY ACTIVITY GUIDELINES FOR ADULTS WITH MS: RECOMMENDATIONS

- Aerobic activities - Two times per week
- Gradually increase your activity so that you are doing at least 30mins of aerobic activity during each workout session.
- These activities should be performed at a moderate –intensity. Moderate intensity is usually 5-6 on scale of 10 and causes your heart rate to go up.
- Some options for aerobic activity include:
 - Upper body exercises: arm cycling
 - Lower body exercises: walking, leg cycling
 - Combined: elliptical trainer.

CANADIAN PHYSICAL THERAPY ACTIVITY GUIDELINES FOR ADULTS WITH MS: RECOMMENDATION

- Strength training activities Two times per week
- Aerobic and strength training can be done the same day but rest your muscles for one day between strength training sessions.
- Pick a resistance heavy enough that you can barely but safely finish 10 to 15 repetition. Repetition is number of times you lift and lower the weight. 10 to 15 repetition is one set, gradually work up to doing two sets of each exercise.
- Strength training activities:
- Weight machines, Free weights, cable pulley.

ORTHOTICS

- Ankle bracing
- Knee bracing
- Ankle foot orthotic (AFO)
- Functional ankle foot orthotics (anterior leaf)



ADAPTIVE DEVICES

- Cane
- Forearm crutches (Canadian)
- Quad cane
- Front wheeled walkers
- Rollators (walkers with seat and brakes)
- Wheelchairs
- Motorized mobility carts



FUNCTIONAL ELECTRICAL DEVICE

- Electrically stimulate ankle dorsiflexion group to assist with walking
- Does not require the nerve to be functional but no evidence to state that the nerve function improves with use of this device
- Does require functioning of the dorsiflexion group for heel to toe gait

QUESTIONS

