

Rehabilitation and MS:

Keep 'em moving!

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Objectives



- Review basic MS facts that relate to mobility disturbance
- Define causes of mobility disturbance in MS
- Discuss the effects of mobility disturbance in MS
- Discuss rehabilitation and “pre”-habilitation
- Increase familiarity with rehabilitation and exercise adaptations in MS
- Discuss effects of recent exercise research on course of the disease

MS Basics in Brief



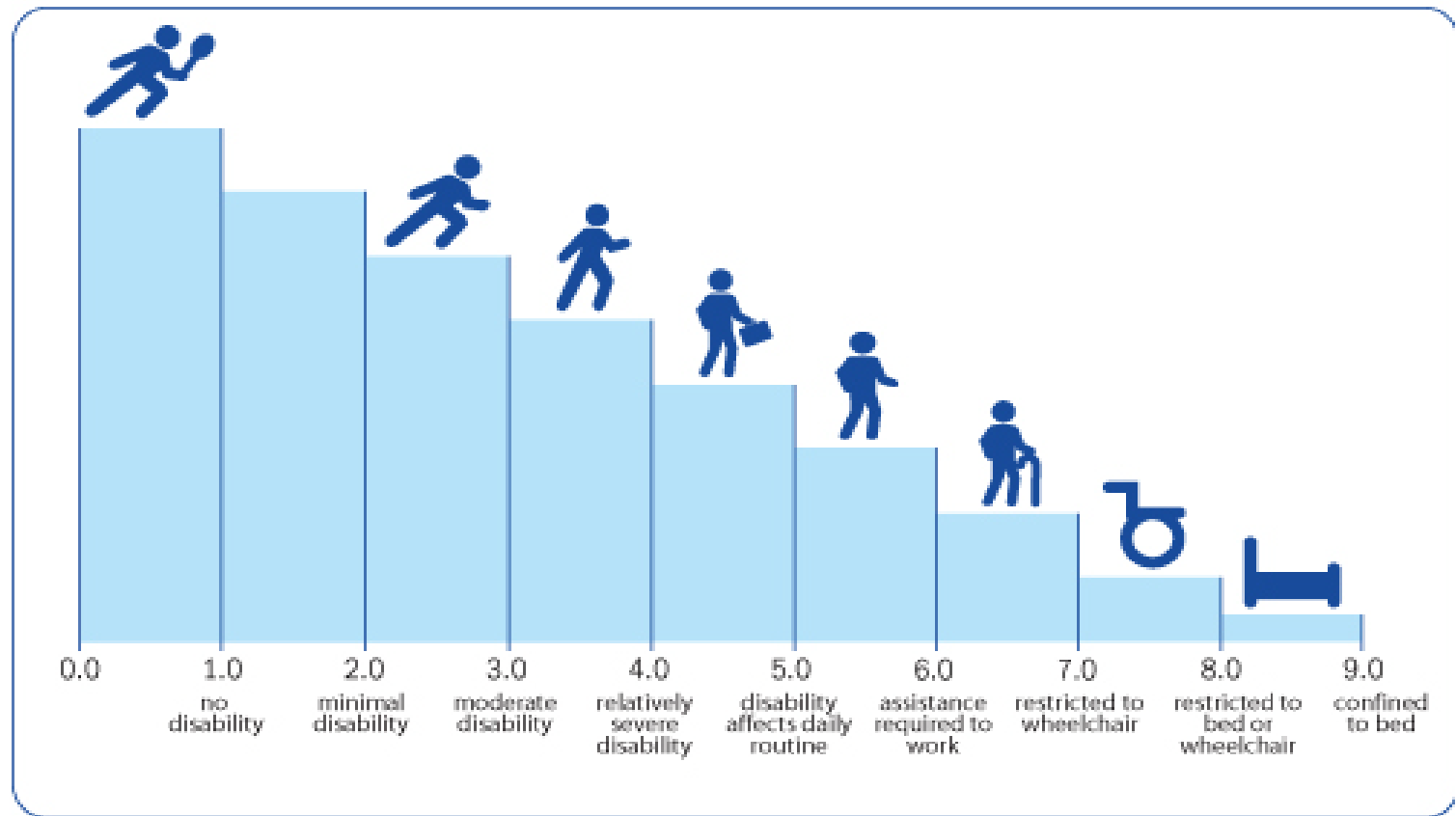
- More than the traditionally reported 2.5million worldwide and 400,000 in the U.S. have Multiple Sclerosis
- Most common cause of disability in young and middle-aged people in the developed world
- Disability causes may include motor or sensory loss, cognitive loss, or severe fatigue to name a few

MS Basics in Brief



- Types of MS
 - Relapsing-Remitting: 80-85% initially
 - Secondary Progressive: ~50% 10 years after diagnosis
 - Primary Progressive: ~10-15%
 - Progressive Relapsing: ~5%
 - “Relapsing Forms”...a matter of semantics?

Mobility Disturbance in MS: The EDSS



Mobility Disturbance in MS: The Facts



- Olmstead County follow-up: Disability change over a decade (1991-2001)
 - 20y after onset, 25% of RRMS had EDSS ≥ 3
 - Median time (SP and PPMS) from MS diagnosis
 - To EDSS score of 6: 10y (SP), 3y (PP)
 - Median time (entire cohort) from MS diagnosis
 - To EDSS score of 3: 17y
 - To EDSS score of 6: 24y
- Disease modifying treatments
 - May delay progression of disability as defined by the EDSS
 - Future treatments: hope for remyelination

Causes of Mobility Disturbance



- Primary
 - Brain or Spinal Cord Lesion
 - Affecting motor, sensory, vestibular, or proprioceptive pathway
 - Both afferent and efferent problems
- Secondary
 - Injury r/t fall
 - Medication side effects
 - MS-related Fatigue, Pain, Continence issues
- Tertiary
 - Depression
 - Lack of resources
 - Deconditioning...domino effect

Effects of Mobility Disturbance



- Deconditioning
- Gait instability
- Poor exercise tolerance, fatigue
 - No longer appropriate to recommend sedentary lifestyle as treatment for fatigue
- Increased fall risk
- Decreased self-confidence
- Isolation, depression, anxiety...
 - Decreased mobility is a common fear
- Increased risk for secondary conditions related to sedentary lifestyle

Effects of Mobility Disturbance



- Increasing physical comorbidities = decreased health-related quality of life
- Secondary health conditions of concern
 - Obesity, osteoporosis, HTN, DM, dyslipidemia, infections
- Vascular comorbidity is associated with more rapid disability progression
- MS nurses have a responsibility to be active in preventive physical care as well as rehabilitative physical care!

Marrie, R., et al. (2011). Cumulative impact of comorbidity on quality of life in MS. *Acta Neurologica Scandinavica*, published online May 26, 2011.

Marrie R., et al. (2010). Vascular comorbidity is associated with more rapid disability progression in multiple sclerosis. *Neurology*, 74, 1041-1047.

Benefits of Exercise



- Randomized controlled trial of yoga and exercise (yoga, stationary bike, or waiting list) improved measures of fatigue
- Chronic exercise can improve strength (UE, LE) and aerobic fitness level; need individualized, realistic expectations
- Exercise is associated with better cardiovascular fitness, improved strength, better bowel/bladder control, less fatigue and depression, and increased participation in social activities

Rehabilitation



- “An active process of change by which a person who has become disabled acquires and uses knowledge and skills necessary for optimal physical, psychological, and social functioning.” (Royal College of Physicians)
- Key Words: achieve, maintain, active, continuous, optimize
- Restorative or Preventive (“pre”-habilitation)

Rehabilitation



- Typically occurs after problem is identified
 - After a relapse
 - During the progressive phase of the disease
- Usually provided by rehabilitation professionals: PT, OT, ST
- Should always be continued at home as a maintenance program
 - Actively, if able
 - Passively, with help of care partner, if not
 - To reestablish function, adapt, and compensate

Rehabilitation



- Requires a multidisciplinary approach
- Team should include
 - Neurologist/physiatrist
 - MS Nurse
 - Rehab professionals
 - PT, OT, ST
 - Care partner, cheerleader
 - Personal trainer/exercise specialist

Rehabilitation



- Should always be supervised initially
 - Fear of exercising safely
 - Knowledge deficiency related to limits, “the new normal”
 - Personal and environmental barriers
 - Possible need for assistive devices that enhance independence and movement, may be activity-dependent
 - Professional expertise regarding
 - Cooling equipment
 - Timing of exercise
 - Medication management

“Pre”-habilitation



- Maintenance or preventive phase
- Encouraging a program of ongoing exercise/physical activity to promote health, prevent deconditioning, and prevent the development of secondary conditions related to a sedentary lifestyle
- Many resources available to assist patients
 - Local programs
 - DVDs
- Most common self-reported activities among people with RRMS
 - Walking, gardening, weight training, bicycling, calisthenics

Role of the MS Nurse in Re- and Pre-habilitation



- Education
 - Importance of physical activity
 - Defining the “new normal”
 - Timing of exercise, realistic expectations, need for reassessment
- Advocacy
 - Community education
 - Care partner involvement
 - Emotional support
- Management of issues that affect physical activity
 - Fatigue, bowel/bladder issues, skin issues, nutrition, medication side effects

Effects of Exercise on MS: Recent Research



- Abstracts from 2011 CMSC
 - Combined supervised aerobic, resistance, and balance exercise, 3d/week for 30-60 minutes significantly improved MS Walking Scale, T25FW, Timed Up & Go test, and functional ambulation score
 - Greater self-efficacy associated with fewer psychological issues and increased ability to perform physical tasks
 - Cross-sectional study to assess physical activity and cognitive function showed average steps/day correlated with processing speed; 2nd study demonstrated this independent of disability score by EDSS

Effects of Exercise on MS: Recent Research



- Abstracts from 2011 CMSC
 - Supervised physical activity associated with an increase in physical activity over time, improvement in goal setting, self-evaluation outcome observation, and functional limitations over time
 - 24 weeks of treadmill exercise decreased iron content in deep brain structures...?meaning
 - Physical activity was associated with less RNFL loss by OCT
 - Physical activity linearly and inversely associated with # of cardiovascular comorbidities independent of disability status and other confounders

Conclusion

- Rehabilitative and “Pre”-habilitative care are indispensable parts of MS care
- Become familiar with physical activity resources in your community for people living with MS
- MS Nurses are often the start point for rehabilitation and physical wellness programs for individuals
- Make an activity assessment a part of each MS visit



Resources



- www.msactivesource.com
- www.ncpad.org
- www.mscando.org
- www.msassociation.org
 - Cooling equipment program
- www.msfocus.org
 - Cooling equipment program
- www.nationalmssociety.org
 - Living with MS > Health Living > Exercise

Thank You!

