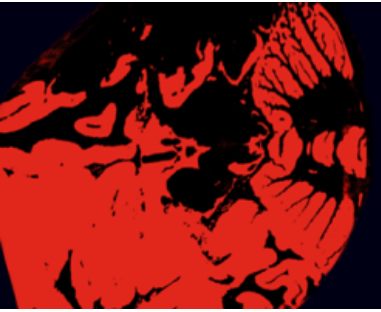

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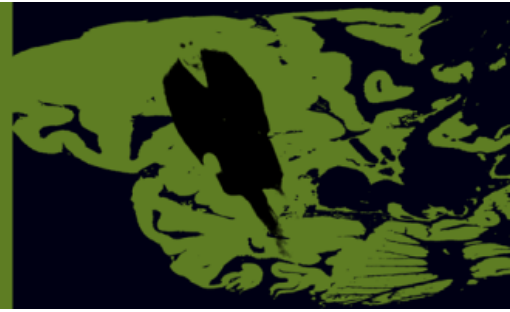

Managing Relapsing Remitting Multiple Sclerosis:
Meet the Collaborative Care Team

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Titles & Affiliations

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Disclosures

- Michelle Cameron has consulted for Adamas Pharmaceuticals, Greenwich Biosciences, and Helius Medical
- Ryan McClaughry has no disclosures
- Cinda Hugos has consulted for Greenwich Biosciences, Evidera, and Techspert.io

Learning Objectives

After this presentation, attendees will be able to describe:

- The **collaborative roles of the neurologist, nurse, and physical therapist** in the outpatient management of patients with relapsing remitting multiple sclerosis
- The **neurologist**'s role in **diagnosis, medication management, and referral** in the outpatient management of patients with relapsing remitting multiple sclerosis
- The **nurse**'s role in the outpatient management of patients with relapsing remitting multiple sclerosis, with a **focus on emergency preparedness**
- The **physical therapist**'s role in the outpatient management of patients with relapsing remitting multiple sclerosis, with a **focus on telerehab for spasticity and fall risk management**

Outline

- Clinical case
- MS background
- The team

The physician's role

- Diagnosis
- Medication management
- Referral

The nurse's role

- Safety
- Coordinating care of MS flares

The physical therapist's role

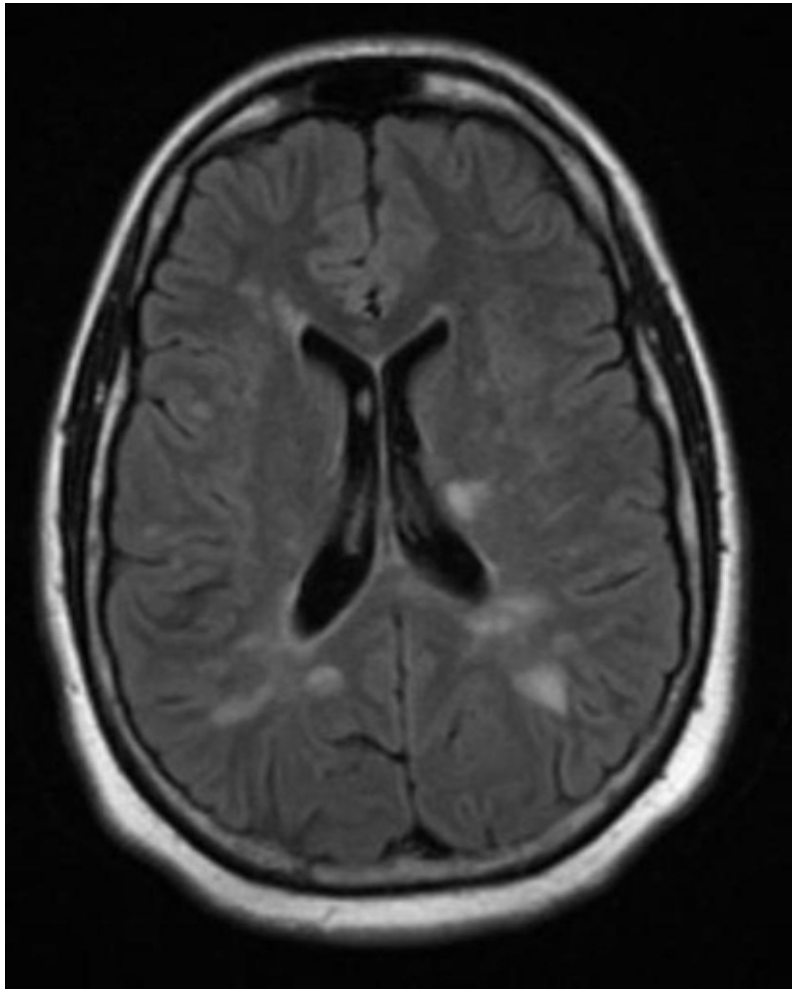
- Safe mobility
- Home exercise program

Clinical Case

- April 9, 2021
- MS, a 65 yo woman with RRMS, diagnosed in 2000, on disease modifying therapy.
- She lives with her husband and 3 dogs in a rural community.
- She ambulates with a walker and has fallen in the last year.

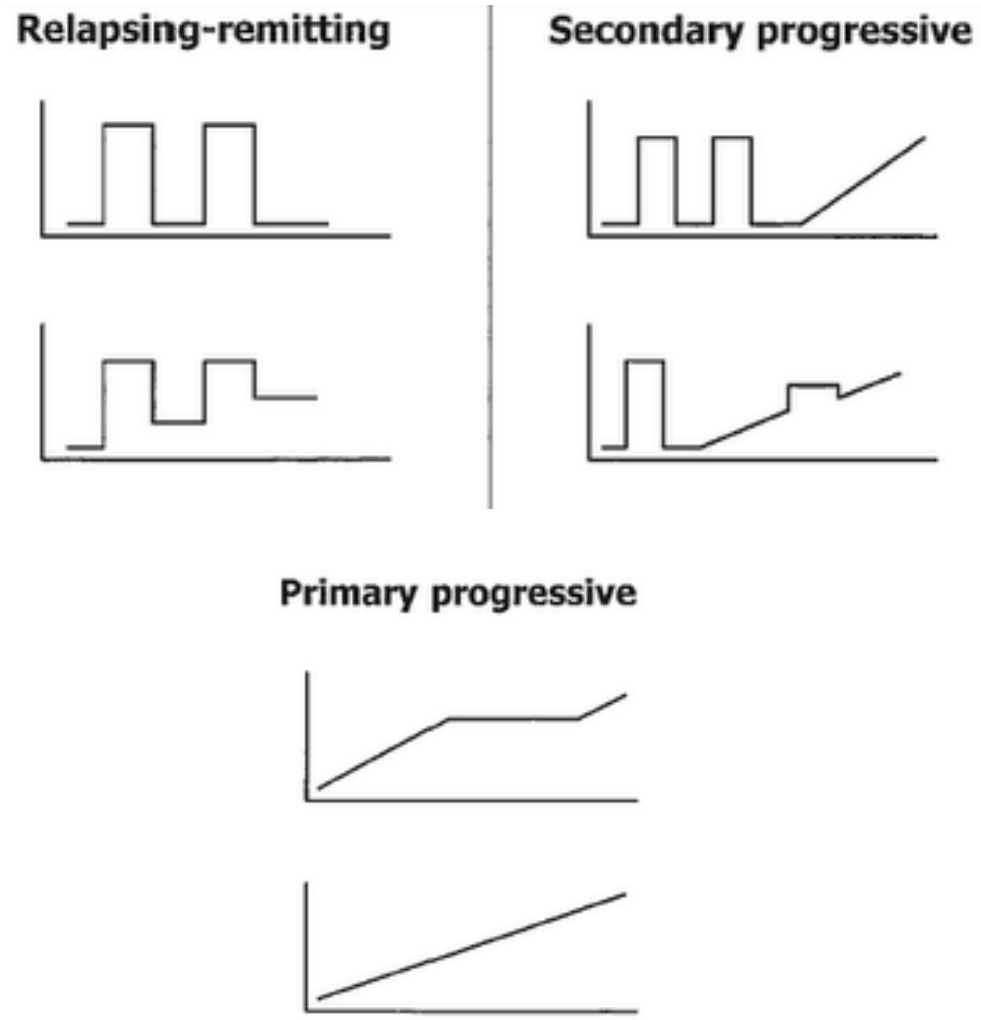
MS Background

- Multiple scars in the CNS, optic nerves
- Neurological symptoms separated in time and space
- No better explanation



Course of MS

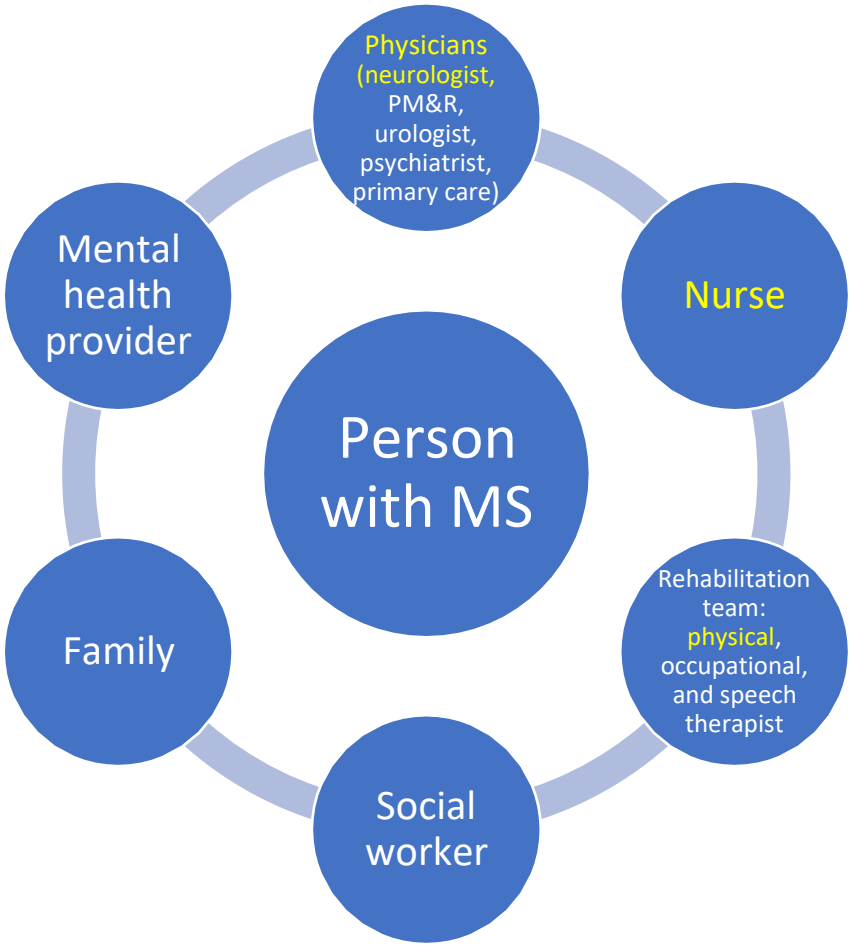
- Types of MS
  - Relapsing remitting (~85% at onset)
  - Secondary progressive (~50% of RRMS at 10-15 years from onset)
  - Primary progressive (~15% at onset)



Who gets MS

- F>M, 2-4:1
- Young adult onset, lifelong disease
- Beyond the 40° latitude (Portland is 45°)
- Genetic predisposition

The Team


Physicians (neurologist, PM&R, urologist, psychiatrist, primary care)
Nurse
Rehabilitation team: physical, occupational, and speech therapist
Social worker
Family
Mental health provider
Person with MS

The Neurologist's Role

- Diagnosis
- Medication management
- Referral

Diagnosis of MS

- Clinical history
- MRI brain
- Other supportive testing
  - MRI spine
  - CSF
  - VEEP

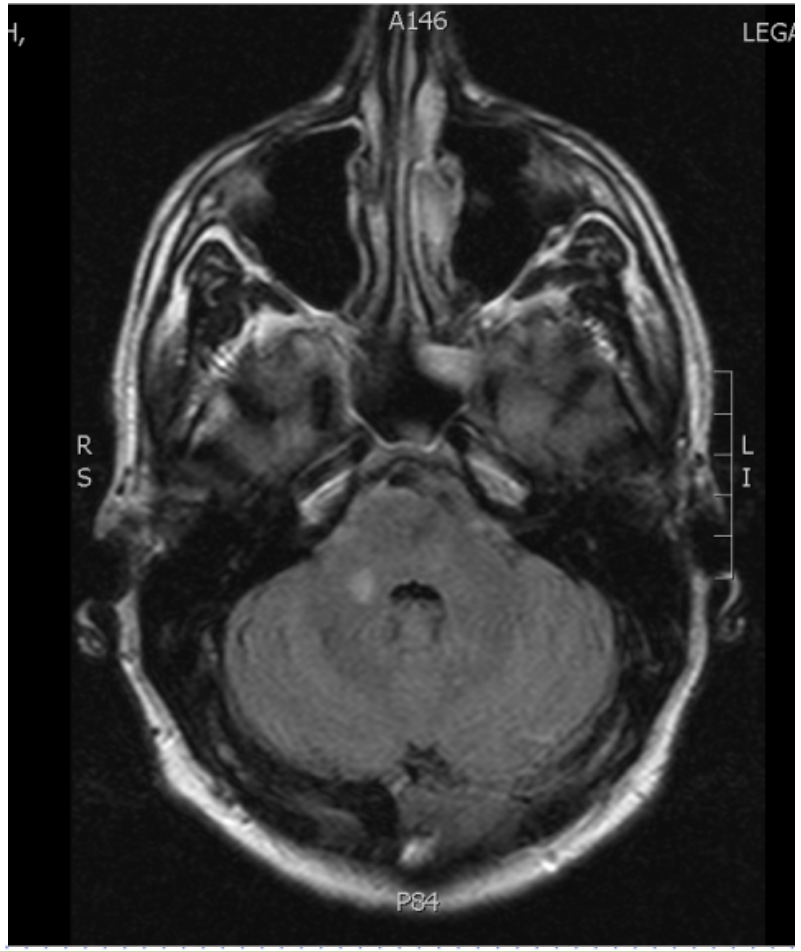
History

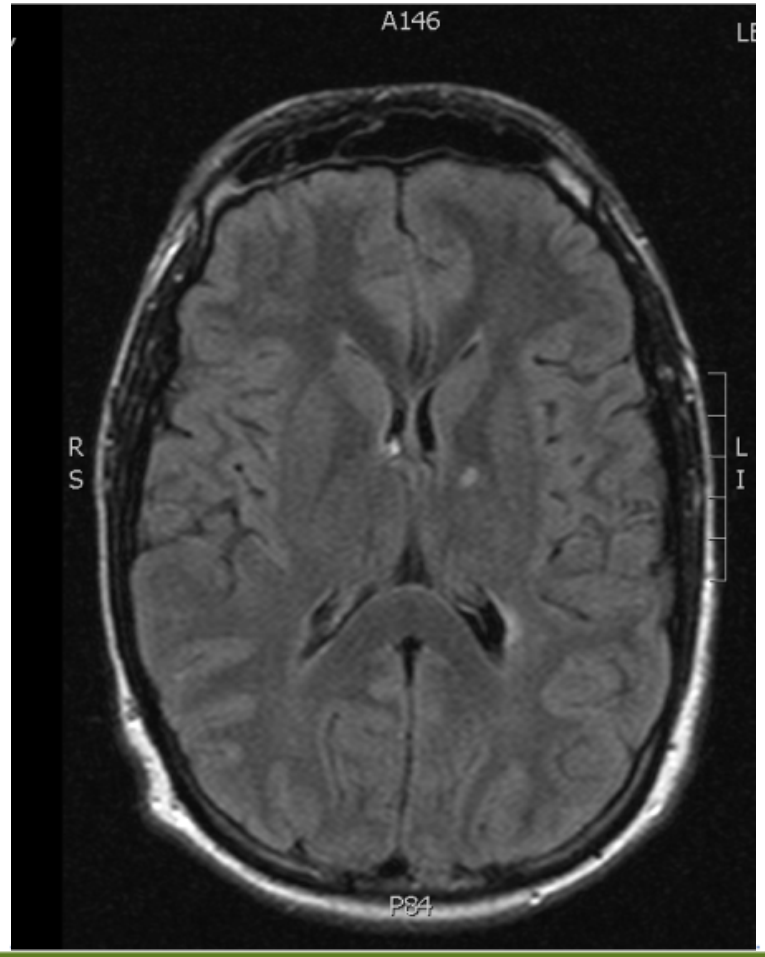
- About 1 month of bilateral hand numbness in 2017
- About 1 month of right facial numbness in 2019
- Presented in 2000 with right optic neuritis –
  - Loss of vision in her right eye over about a day
  - Lasted about 6 weeks and fully resolved
  - MRI showed enhancing and non-enhancing lesions separated in space

Exam

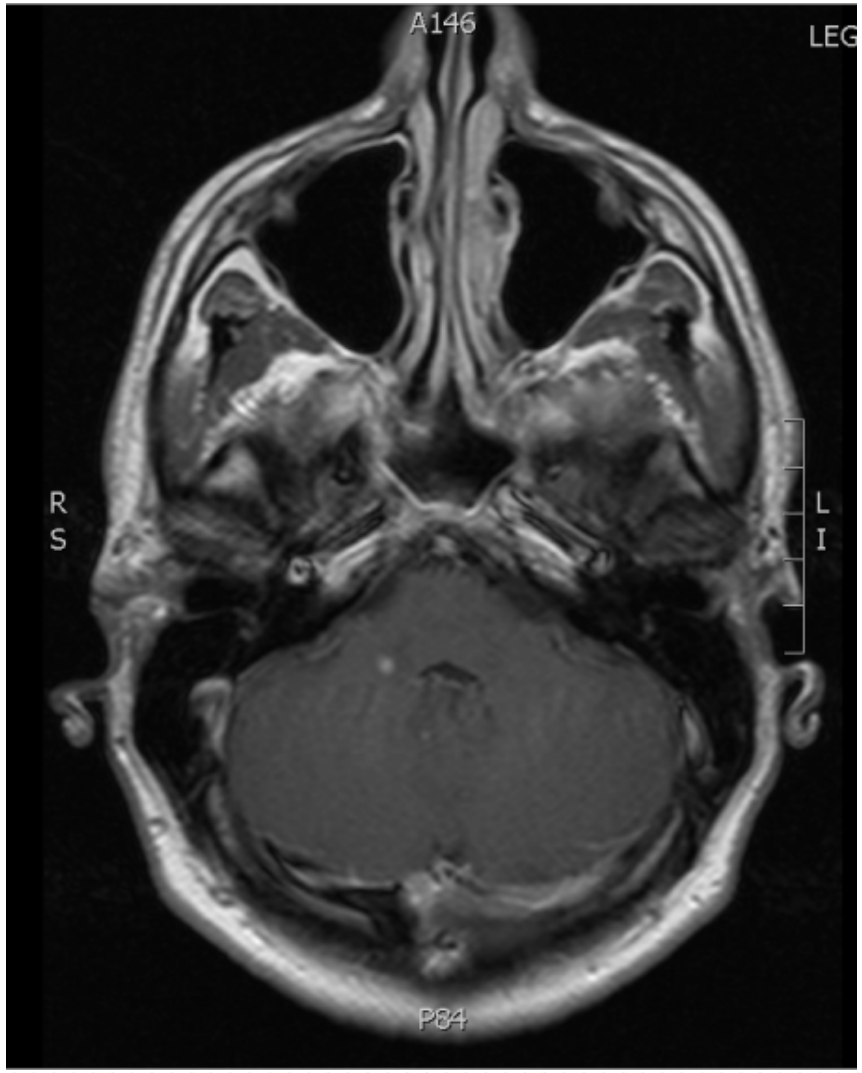
- Bilateral brachioradialis, patellar, and Achille's hyperreflexia
- Upgoing toes on RLE, neutral on LLE

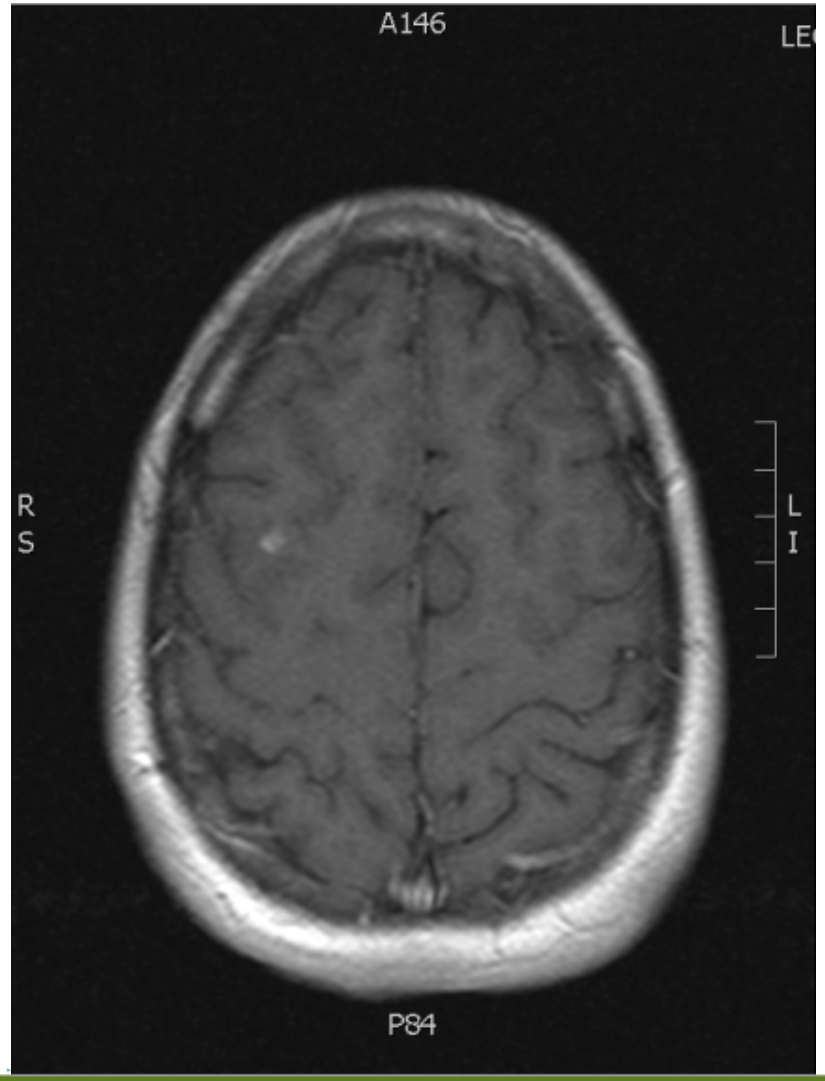
MRI brain 6/10/10
FLAIR (fluid attenuation inversion recovery)





MRI brain 6/10/10: T1 contrast





MS Diagnostic Criteria

Clinical Presentation	Additional Data Needed for Diagnosis
≥ 2 clinical attacks and objective evidence of ≥ 2 lesions	None
≥ 2 clinical attacks and objective evidence of 1 lesion	DIS: an additional attack implicating a different CNS site OR by MRI[a]
1 clinical attack and objective clinical evidence of ≥ 2 lesions	DIT: an additional clinical attack OR by MRI[b] **OR** CSF-specific oligoclonal bands
1 clinical attack and objective evidence of 1 lesion	DIS: an additional clinical attack implicating a different CNS site OR by MRI[a] **OR** DIT: an additional clinical attack OR by MRI[b] **OR** CSF-specific oligoclonal bands

Adapted from Thompson AJ, Banwell BL, Barkhof F, et al. Diagnosis of multiple sclerosis: 2017 revisions of the McDonald criteria. *Lancet Neurol.* 2018;17:162–73.

Abbreviations: CNS, central nervous system; CSF, cerebrospinal fluid; DIS, disseminated in space; DIT, disseminated in time; MRI, magnetic resonance imaging.

[a]DIS by MRI: new lesions on follow-up imaging or both gadolinium-enhancing and non-enhancing lesions on single MRI.

[b]DIS by MRI: ≥ 1 symptomatic or asymptomatic lesion in ≥ 2 areas including cortical/juxtacortical, periventricular, infratentorial, or spinal.

Medication Management

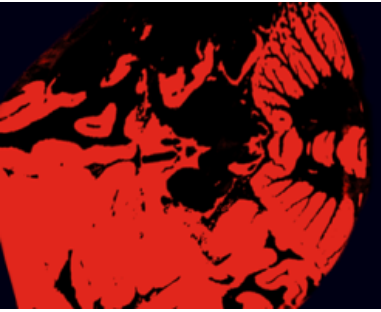
- Disease modifying therapies (>20)
  - Reduce relapse rate
  - Slow accumulation of disability
  - Approved for relapsing forms of MS
    - Clinically isolated syndrome,
    - Relapsing remitting disease,
    - Active (with relapses or new MRI activity) secondary progressive disease
- Relapse management – high dose steroids
- Symptom management

Choosing a DMT with our patients with RRMS

- By route of administration
  - Injectable
  - Oral
  - IV
- By “benefit”
- By “risk”
- By cost

Referral

- Other physicians – urologist, PM&R, psychiatrist, primary care
- Rehab therapies – PT, OT, SLP
- Psychosocial – social work, counseling



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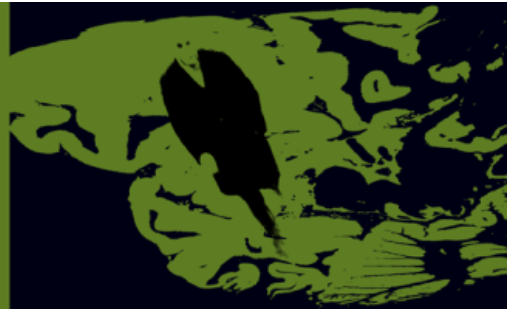


Role of the MS Nurse in RRMS and Emergency Preparedness

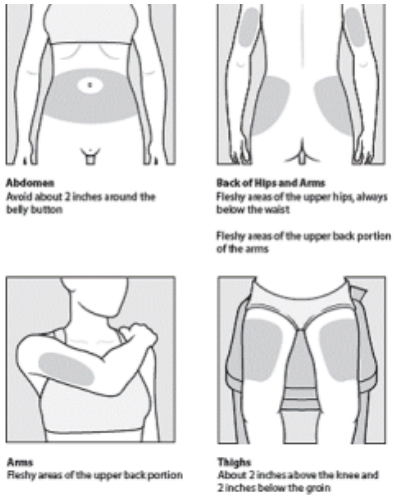
Ryan McClaughry, BSN, RN

RRMS Nursing Management

MS nurse collaborates with the outpatient MS collaborative care team (neuroimmunologist, pharmacy, social work, rehab, prosthetics) to help with dynamic treatment management for patient with RRMS

- Patient education for home injection of disease modifying therapy (DMT) and other subcutaneous (SQ) and intramuscular injections (IM)
- Monitor and assist with management of side effects of DMT
- Coordinate with local and remote healthcare settings for laboratory and imaging
- Coordinate rural access for MS relapse/flare symptom treatment
- Discuss with MS patients the importance of emergency management and advance planning

Self-Injection Training



Nursing demonstration and assessment of self injection

1. Preparation of device and medication
2. Site selection and site preparation
3. Administration
4. Disposal
5. Monitor for side effects and when and where to communicate adverse effects
6. Ordering new supplies as needed

DMT Monitoring

Communicate with MS clinic

- Provide access to specialized support (providers, nursing, pharmacy)
- MS nurse triage of adverse effects
- Identify resources to help manage side effects

Testing and Imaging

- Laboratory ordering and acquisitions of results
  - Remote facility and 3rd party coordination
  - Lumbar puncture

MRI

  - Open MRI (sedation)
  - Records

MS Relapse/Flare Treatment

Oral vs IV steroids

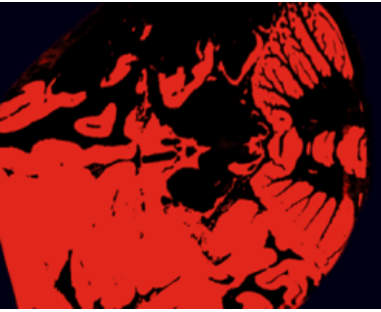
- Nursing considerations
  1. Location of infusion centers
  2. Patient preference
  3. Pharmacy locations

Emergency Preparedness and Advance Planning

Emergency Preparedness Advance Planning

- Emergency preparedness
  - Medications on hand
  - Ambulatory status
  - Transportation needs

Advance planning
  - Airconditioning
  - Cooling vests



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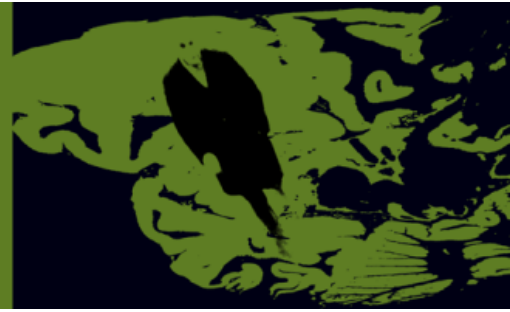


Role of the Physical Therapist and Rehabilitation in RRMS Management

Cinda Hugos, MS, PT

The Rehabilitation Team and Roles

- **The experts on getting through the day and living a quality life**
- Speech therapist's role – communication
  - Articulation
  - Cognition
- Occupational therapist's role – daily activities that 'occupy' one's time
  - Self-care
  - Home care
  - Childcare
  - Employment

The Physical Therapist's Role

- Mobility
- Exercise
- Non-pharmacologic pain management
- Traditionally treated 1:1 in person
  - Patient comes to therapist office
  - Evaluation
  - Treatment
  - Re-evaluation
  - Go live your best life
- COVID-19 is teaching us alternative methods of therapy delivery are possible

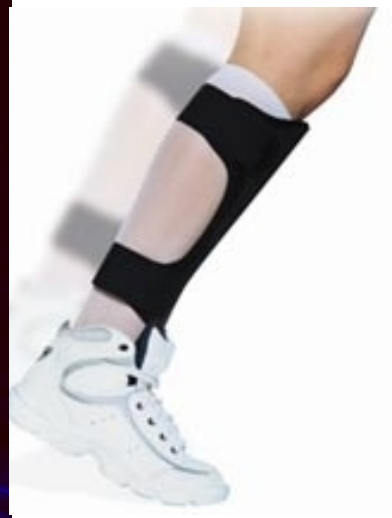
Mobility – Fall Prevention and Management

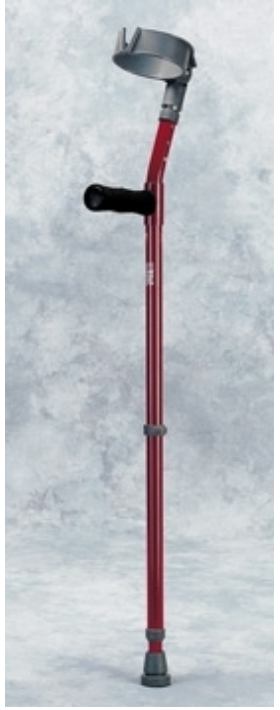
- People with MS fall frequently
  - >50% fall once and 30%-50% fall multiple times in 3-6 months
  - Fear of falling: activity curtailment when already less active than normal age matched controls
  - Fall related injuries: fractures, intracranial hemorrhage, death
- Fall risk factors are duration of disease, progressive MS subtype, imbalance, cognitive dysfunction, use of a walking aid
- Walking aid use is consistently reported as a contributor to falls
  - Prescribed *because* one falls to prevent future falls
  - But does the walking aid actually *cause* the falls?
  - Likely the most modifiable of the risk factors

Clinical Case

- She lives with her husband and 3 dogs in a rural community.
  - Consider occupational therapy for home safety evaluation
    - Where are the dogs? Inside or outside? Underfoot?
    - Clutter?
    - Bathroom mobility
    - Ability to navigate inside and outside home
- She ambulates with a walker and has fallen in the last year.
  - Already you know she is at risk for future falls – history of a fall and using a mobility device
  - Is the device appropriate?
  - Does it fit well?
  - Are there other needs?
    - Ankle foot orthosis (AFO) or functional electrical stimulation (FES)
  - Gait training with device


Red





Walking and Equipment Evaluation and Training

- Make sure device is appropriate and fits correctly or get and fit an appropriate device
- Practice using walking aid in functional situations – without dogs then with dogs present
  - Sit-to-stand transfers
  - Walking on various indoor surfaces – wood/tile floor, carpet, transitions
  - Walking and turning – large turns then small turns
  - Walking with dual tasks – head side to side, head up and down, counting, adding, words starting with a letter, talking (most complex)
  - Stairs
  - Sit to stand with newspaper/magazine, coat, beverage
  - Walking on various outdoor surfaces – concrete, gravel, grass, curbs
  - Outdoor multitasking
  - Progress to tolerance and environmental needs – not everyone works on stairs or outdoors

Mobility Equipment

- Some will need equipment for distance mobility
- Occasional indoor and outdoor use – must be able to justify for indoor use since insurance will only cover for in home mobility
- Scooters
- Manual wheelchairs
- Power wheelchairs – simple to all the bells and whistles of tilt/recline, elevating seat, elevating leg rests
  - All must be justified specifically

Clinical Case

- She lives with her husband and 3 dogs in a rural community.
  - Safety is always a concern
- She ambulates with a walker and has fallen in the last year.
  - Likely has weakness and deconditioning
  - Over 80% of people with MS have spasticity
  - Look for incoordination, ataxia

Exercise

- Evaluate needs
  - Spasticity
  - Weakness
  - Deconditioned
- Train and teach home exercise program
  - Spasticity
    - Stretching
    - Standing
  - Strengthening
    - Selective strengthening emphasizing function, ie, sit to stand
  - Cardiovascular
    - Endurance training – walking but usually other needed as well, ie, exercise bike, water exercise

Research and Covid-19

- Assistive Device Selection, Training and Education Program – ADSTEP funded by National MS Society
  - Delivered via Zoom
  - Six 40-minute sessions with a physical therapist
  - Evaluation of the current device, then selection and fitting of appropriate aid if needed
  - Task oriented training in progressively more challenging conditions
  - Fall counts daily for 6 months
- Evaluation of a spasticity management program for people with multiple sclerosis
  - Delivered via WebEx
  - Two 2-hour group sessions with a trained facilitator
  - First class – education on spasticity
  - Second class – learn exercises
  - Exercises daily for 6 months

Creative Adaptations of Home Delivery

- iPad or iPhone stands
- Curb simulation – treadmill or aerobic step platform
- Sit to stands from car in driveway – walk to and from car on a sloped driveway so able to build in variable walking surface – managing keys and cane with sit to/from stand in and out of car
- Sit to stands from bottom step, lift chair, or floor
- Variable lighting- open or close shades/ blinds or carry mobile phone using flashlight feature
- Simulate community indoors – subject carries TV remote – TV provides background noise/movement. Change channels while walking /turn on /off TV. Play iTunes on phone or play radio.
- Pets have played a vital role to provide distractions and needs to navigate around moving beings. “My favorite of all for community simulation – roller skating daughter, two cats, and a dog.”

Conclusions

- It takes a team to optimize quality of life for a person living with MS
- The patient is the center of the team
- The neurologist focuses on diagnosis, medication management, and referral
- The nurse focuses on patient education and coordination of care
- The physical therapist focuses on getting through the day and leading a quality life
- Together, our patients live their best lives

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Thank You

Q & A