

# Managing the Symptoms of Multiple Sclerosis

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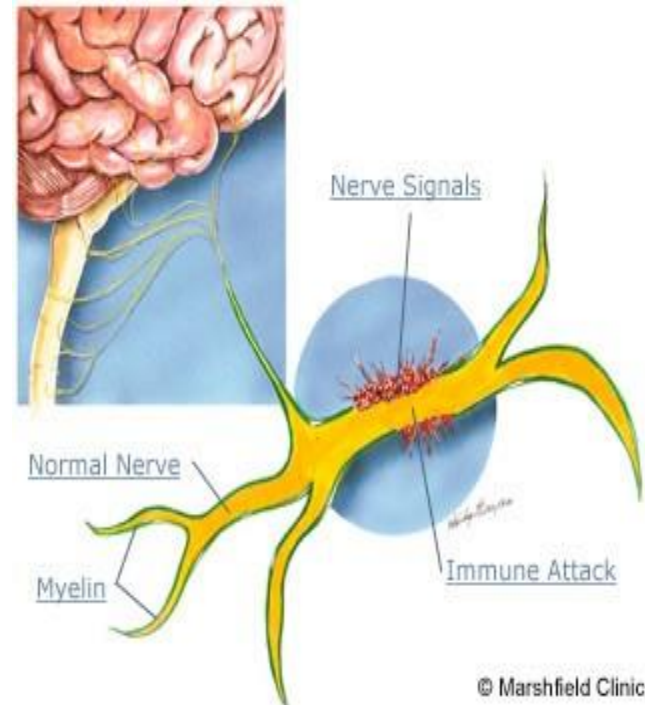


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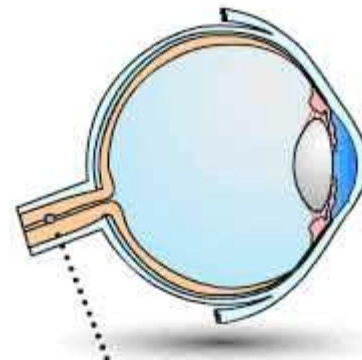
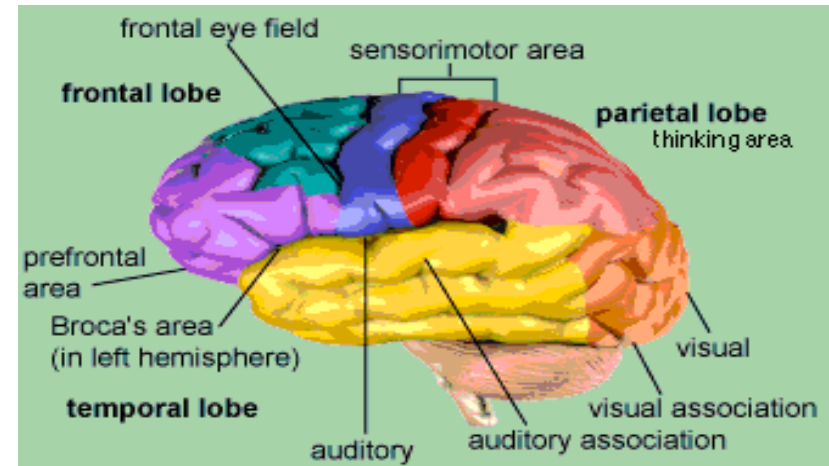
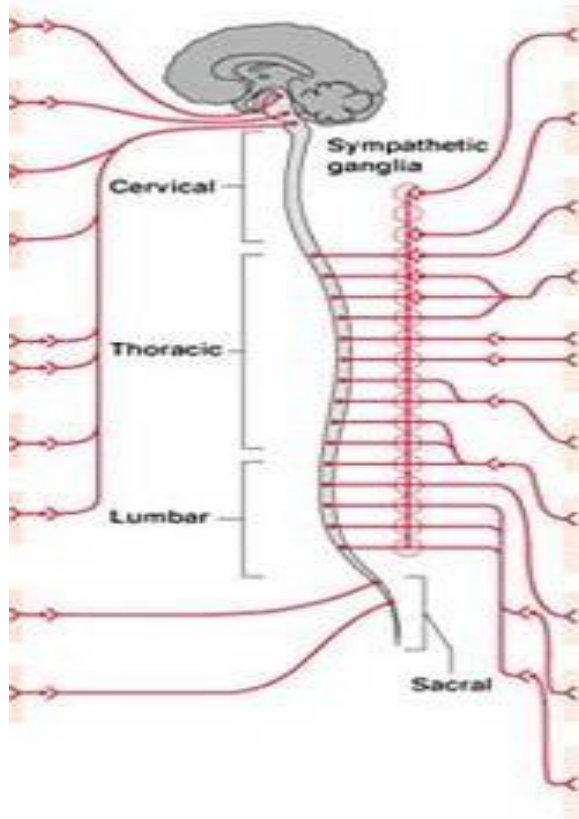
**Center for Pediatric Onset  
Demyelinating Disease**

# What is Multiple Sclerosis

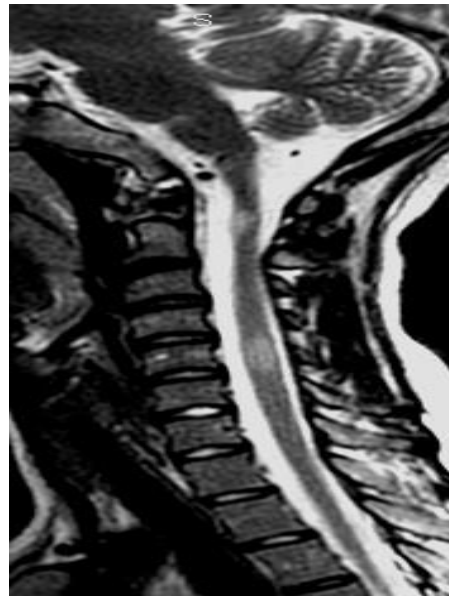
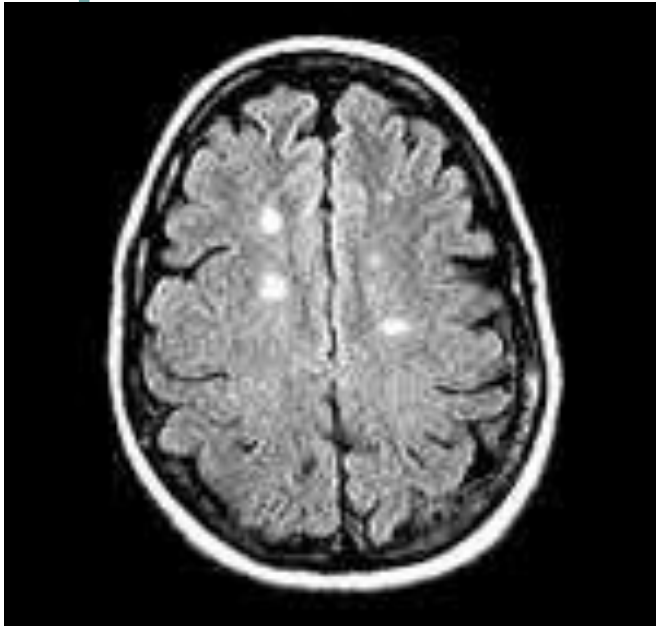
- An autoimmune disease that affects the central nervous system (CNS)
- The immune system mistakenly attacks the body's myelin and cause the nerves to be damaged causing scarring
- The scarring begins to slow and interrupt the transmission of nerve impulses, resulting in the symptoms of MS



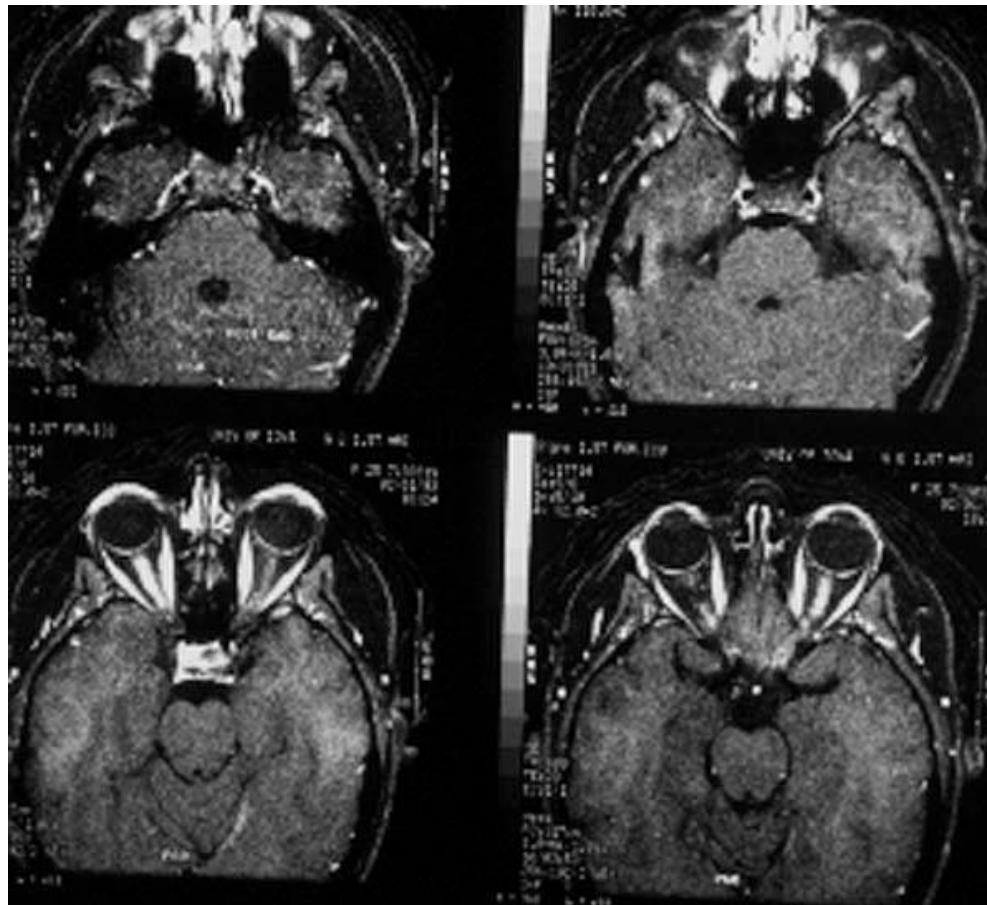
# MS Affects the Brain, Spinal Cord and Optic Nerves



# MS Brain Lesions



# Bilateral Optic Neuritis



# ADEM



# Transverse Myelitis





# Common Symptoms of MS

- Tingling or numbness in one part of the body
- Problems with balance and/or coordination
- Muscle weakness in one part of the body
- Fatigue
- Spasticity
- Change in vision
- Fatigue
- Slurred speech or stuttering
- Bladder or bowel problems
- Cognitive changes
- Depression or other emotional changes





# Temporary and Permanent Symptoms

## Temporary Symptoms

- Due to exacerbations or flare-ups
- May be due to new symptoms or the aggravation of old ones
- Associated with **inflammation** and demyelination in the CNS
- Treated with corticosteroids by mouth or by IV

## Permanent Symptoms

- Inflammation that has resulted in **permanent scarring** or damage to the nerve cell
- Occurs when the symptoms tend to remain.
- Treatment options are based on each individual patient symptoms

# Deciding When and If to Treat

- Numbness, tingling and very mild weakness is frightening and disconcerting to the child, but generally resolves on its own without medication
- Medication is only prescribed for those acute attacks that are significant enough to interfere with the child's function at home or at school

# Example 1

- 17 year old Shawn went outside to shovel the snow. When he came back in he notices right hand was numb. Should the Neurologist be called?
- The next day the numbness is still there. He attempts to drink a cup of coffee and the drops the hot cup onto the floor! Should his neurologist be called now?
- What if after a few hours the numbness is gone and it periodically comes and goes?

## Example 2

- Kelly wakes up and notices that her right eye is blurry. It last for 10 minutes and then her vision returns to normal. Should she call her Neurologist?
- Kelly wakes up to extreme left eye pain and double vision; she can not see out of that eye and the light at school hurts her eye; Should she call her Neurologist now?



# Managing Acute Attacks



## Corticosteroids

- Man-made hormone given to reduce inflammation
- Can be given by mouth (Prednisone) or by IV (Solumedrol)
- 3-5 day course of high dosage
- Given to improve symptoms and shorten recovery time
- Corticosteroids do not change the long-term course of MS or have any other long-term benefits

## Other Acute Treatment Options

- Intravenous Immune Globulin (IVIG)
  - Plasma Exchange (PLEX)

# Modifying the Disease Course

Currently there are 6 medications that modify the immune system in order to reduce immune activity in the treatment of Relapsing-Remitting MS

Avonex  
Betaseron  
Copaxone  
Rebif  
Plegridy  
Extavia



# MS or not MS?

- MS can cause symptoms in many parts of the body, however, it is not the cause of everything that occurs !
- You can get the same viral illnesses and assorted problems that all people your age get
- Fevers or infections may temporarily worsen MS symptoms, but will improve as the fever is under control

## Examples of Symptoms that Are Not MS

- Upper respiratory infections
- Infections
- Nose bleeds
- Headaches
- Stomach viruses
- Fever
- Rash over entire body
- Acne
- Flu-like symptoms that last longer than 48 hours

## Examples of Symptoms that May be Due to an Exacerbation

- Bladder or urinary tract infection
- Constipation
- Loss of control of bladder or bowel
- In addition to other neurologic symptoms discussed earlier!

# MS Fatigue

- Most common complaint
- Caused by a variety of factors
  - Sleep disturbance
  - Medications
  - Lack of energy
- Identify the source
  - Talk with your healthcare provider (i.e. for sleep aids, medications for fatigue, or PT exercises)

# MS and Heat Intolerance

- Overheating can increase fatigue, weakness and visual disturbance
- Drink plenty of fluids- water is the choice !
- Use fans, air-conditioning or spray bottles
- Exercise in a cool environment
- Wear commercial cooling garments-vests, headbands, neckbands
- Pre-cool before activities
- Do a cool bath or shower following activity or exposure to a hot environment



# Summary of Symptoms to Report

- Changes in Vision
- Eye Pain
- Incontinence
- Muscle Weakness
- Facial Drooling
- Difficulty Swallowing
- Difficulty Breathing
- Fatigue
- Depression
- Cognitive Changes
- Suicide
- Frequent UTIs
- Bladder or Bowel Dysfunction
- Spasticity
- Slurred speech or stuttering
- Balance and/or coordination
- Tingling or Numbness

## When to go to your local ER Immediately!

Difficulty Breathing

Difficulty Swallowing

Thoughts of Suicide

Sudden Onset of Cognitive Change

New Onset Seizures

**\*These symptoms require immediate attention,  
the Neurology Team can be notified after the  
patient is stable!**



## Choosing When to See Your Neurology Team

- When symptoms are noticed, make a mental/written record of the time!
- If the symptoms last more than 24 hours or if the patient is getting worse, notify the Nurse Practitioner for advise and recommendations!
- If the symptoms are better within 24 hours or less, record the date and time and notify the team at your next appointment!