INVISIBLE SYMPTOMS: 
FATIGUE, DEPRESSION AND 
COGNITIVE DYSFUNCTION

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Cognition
What Is Cognition?

- Thinking skills
- Understanding language and expressing yourself
- Concentrating, shifting attention, multitasking
- Learning and remembering new information
- Planning and performing complex tasks
- Solving problems

Cognitive Dysfunction in MS

- May affect 45%–70% of people with MS
- Not related to physical disability
- May occur early in the disease
- Is under-recognized, underdiagnosed, and misdiagnosed
- Self reports of cognitive dysfunction in MS are confounded by depression

Cognitive Dysfunction Often Correlates With MRI Findings

- Number of lesions
- Location of lesions
  - White matter
  - Gray matter
- Presence of atrophy


Effects of Cognitive Dysfunction

- Activities of daily living
  - Household management
  - Personal care; family care
- Employment
- Recreational activities
- Relationships
- Social interactions
**Areas Affected**

- Speed of information processing
- Verbal and visual memory; acquisition and retrieval
- Attention and concentration
- Word retrieval; verbal fluency
- Reasoning and problem-solving
- Visual and spatial organization
- Executive functioning

**Signs of Cognitive Dysfunction**

- Trouble remembering
- Difficulty finding the right words
- Slowness in or inability to understand what is heard or written
- Difficulty following directions
- Trouble with decision making
- Emotional changes
- Forgetting a thought midsentence
Signs of Cognitive Dysfunction (cont)

- Poor performance reviews at work
- More hours to accomplish a familiar task
- Difficulty starting a project
- Difficulty finishing a project
- Problems balancing a checkbook
- Problems following a recipe
- Car accidents

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Memory

- 22%–31% of patients are affected
- Memory of events and conversations
- Involves both learning and recall
- Short-term memory is affected: may be related to poor concentration
- Long-term memory is spared

Attention and Information Processing

- 22%–25% of patients are affected
- Decreased processing speed; slowing of mental functioning
- Difficulty filtering out distractions
- Cannot focus on more than one task at a time (multitasking)


Verbal Fluency

- 22% of patients are affected
- Retrieval of words
- Expression of words

Executive Function

- 13%–19% of patients are affected
- Most apparent to others
- Difficulty understanding complex concepts
- Difficulty with organization
- Problems starting or completing projects
- Inability to solve problems or use good judgment in certain situations


Visual and Spatial Perception

- 12%–19% of patients are affected
- Affects activities of daily living
- Affects ability to drive
- Trouble operating machines
- Trouble assembling items

Language

- 8%–10% of patients are affected
- Meaningless conversations
- Significant effect on relationships


Occurrence of Cognitive Deficits

- No problems: 24%–36%
- One area affected: 43%–56%
- Multiple areas affected: 20%–22%

Other Causes of Cognitive Dysfunction in MS

Fatigue
- Physical fatigue has less impact on cognition than once thought
- Cognitive fatigue: slows speed of information processing, accuracy, and reaction time

Depression
- Affects working memory

Medications

Evaluation and diagnosis

- Neuropsychologist
- Speech-language pathologist
- Occupational therapist
Neuropsychological evaluation

- Battery of tests designed to assess areas of reported difficulties, as well as pre-existing and current strengths
- Full battery of tests: 6–8 hours over 2 days
- Shorter batteries have been developed for MS
- Expensive; often not covered by insurance
- Various screening tests are available

Other cognitive screening

- Speech Language Pathologists and Occupational Therapists may be able to do screening
- These screens are practical and allow the therapists to teach compensatory tools to improve function in all aspects of daily expectations
  - Work
  - Home management
  - Leisure
  - Personal care
When Is Cognitive Evaluation Appropriate?

- It is necessary to establish a baseline
- Changes in the patient’s abilities have been reported
- The patient’s condition is potentially treatable
- The patient is being started on a new treatment
- A patient’s application for SSDI or vocational rehabilitation is being considered
- Legal issues


Do Medications Help?

- Treatment with a disease-modifying therapy early in the disease course may reduce the number of new lesions and ultimately play a role in preventing cognitive changes
- Managing fatigue and treating depression may help with cognition

Cognitive Rehabilitation

- Addresses affective and social issues
- Teaches compensatory measures
- Improves QOL

Depression
Depression

- Syndrome of signs and symptoms that are episodic or clustered and both psychological and physiological\(^1\)
- Occurs in 3%-5% of the general population\(^1\)
- May occur in approximately 60% of patients with MS\(^1\)
- “Profound sense of discomfort or withdrawal that lasts most of every day for at least 2 weeks”\(^2\)


What Do We Know?

- Depression differs from normal grieving
- People with MS are at increased risk for depression
- >50% of MS patients will experience a major depressive episode at some point over the course of the disease
- Suicide is more common in MS patients than in the general population

Characteristics of Depression

- Feelings of sadness or despair
- Loss of interest or enjoyment
- Fatigue and sleep disturbances
- Appetite changes
- Inability to concentrate
- Psychomotor slowing
- Irritability or anxiety

Depression and MS

- Increased incidence in patients with MS compared to those with other chronic disabling diseases
- Suggests a pathophysiological mechanism related to demyelination in the brain
- Less frequently seen in patients with spinal cord disease only
- Increased in patients with brain atrophy
Symptoms of depression can be confused with symptoms of MS such as fatigue and cognitive dysfunction.

If fatigue is suspected, intervention may be helpful.

If symptoms persist, evaluate for depression.

Best treatment for depression:
Psychotherapy + Medication (+ Exercise)

If the patient complains of depressed mood but doesn’t meet the criteria for major or minor depression, treatment may improve quality of life.

Encourage seeking strength in spiritual beliefs.
Depression: Implications

MS patients who are depressed:
• Carry an additional, painful burden
• Can’t participate actively in their own care
• Can’t plan or solve problems effectively
• Are difficult to live with

Care for the Caregivers

○ Depression is quite high in caregivers and family members of patients with MS
○ Depression in caregivers increases as the patient's disability increases
○ Caregivers need to report signs of depression in themselves to their physicians

Emotional Lability

- Inability to control emotions
- Usually out of proportion to the degree of sadness or happiness
- May be a sign of emotional distress
- Usually responds well to antidepressants
- Neudexta (Avinir: combo of dextromethorphan and quinidine)

Facts About MS and Depression

- Depression increases with:
  - Recent diagnosis
  - Changes in or loss of physical function
  - Lack of or decreased social support
  - Presence of co-morbidities
- Younger patients are more likely to be depressed
- Men may be as likely as women to be depressed
The Good News

- Depression is one of the most treatable symptoms of MS

Management of Depression

- At every appointment with any healthcare provider both primary care or neurology, the patient should be asked about status of mood
- Monitor depression carefully, especially if the patient is on an interferon or steroids
- Refer the patient to appropriate mental health professionals as necessary
- A dual approach of medications and psychotherapy is usually most beneficial
- Exercise is a nonthreatening treatment
Summary

- Cognitive problems and depression are commonly seen in MS patients
- There is considerable crossover of symptoms between MS and depression
- Providers need to be alert to the symptoms of depression and make an attempt to diagnose and treat appropriately

Case Study

- Mary is 35 and has been diagnosed with MS for 5 years. She is married with 2 young children and works full time as an office manager. She did not originally agree to take a disease modifying therapy but has been on glatiramer acetate for the past 3 years and is adherent.
Mary has not had exacerbations in the past 3 years. She is, however, complaining of new and increasing symptoms:

- Difficulty completing her usual work load
- Finding more mistakes in her work
- Received a recent performance review that was not the usual top level she previously received
- Lack of desire to do any of her “fun” activities
- Increased irritability with her husband and kids

What do you think is going on with Mary?
How would you manage her issues?
What would you do first?