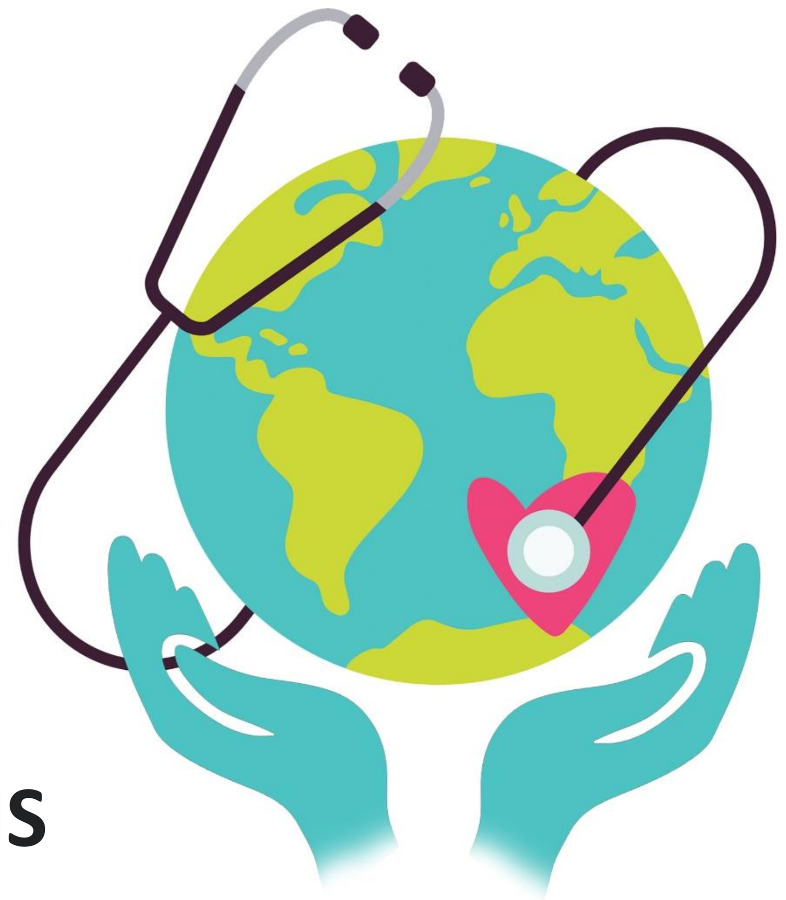
International Organization of MS Nurses

Invisible Symptoms, Mental Health, and MS



Supported by Novartis Pharmaceuticals Corporation

Invisible Symptoms

- Invisible symptoms can often be the most impactful to the individual
  - Fatigue (most common)
  - Pain
  - Cognitive difficulties (memory, attention, processing)
  - Emotional disturbances
  - Depression and anxiety

Halper J, Harris C. *Nursing Practice in Multiple Sclerosis: A Core Curriculum.* 4th ed. 2016.

FATIGUE

Fatigue

- Most common and disabling symptom of MS
- Experienced by up to 83% of patients
- 50–60% describe it as one of their most troubling symptoms
- Reported in all disease stages and subtypes
- Both white matter and gray matter lesions, peripheral and central mechanisms implicated

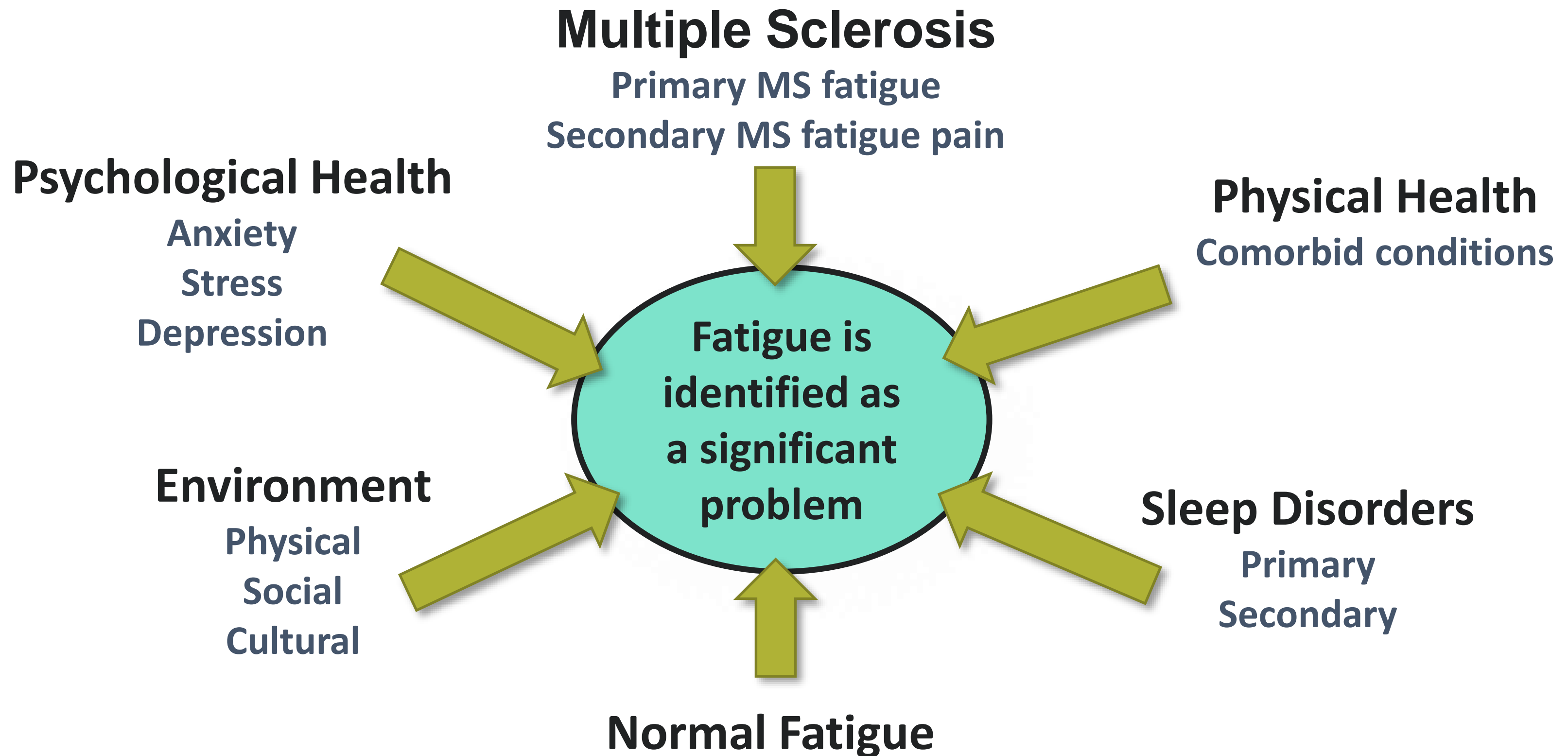
Schapiro RT. *Managing the Symptoms of Multiple Sclerosis.* 6th ed. 2014;
Majaly ZM et al. *J Neurol Neurosurg Psychiatry.* 2019;90:642-651;
National MS Society. Management of MS-related fatigue. Expert Opinion Paper. 2006;
Rottoli M et al. *Expert Rev Neurother.* 2017;17:373-379;
Halper J, Harris C. *Nursing Practice in Multiple Sclerosis: A Core Curriculum.* 4th ed. 2016.

Clinical Characteristics of Fatigue

- Overwhelming sense of sleepiness
- Constant sense of tiredness
- Lack of energy
- Feeling of exhaustion
- Not necessarily related to level of disability
- May affect motor function
- May affect cognitive function
- Not fully understood

Comi G, Leocani L. *Expert Rev Neurother*. 2002;2:867-876;
Krupp LB. *Fatigue in Multiple Sclerosis: A Guide to Diagnosis and Management.* 2004;
National MS Society. Management of MS-Related Fatigue. Expert Opinion Paper. 2006.

Potential Causes and Effects



Krupp LB. *Fatigue in Multiple Sclerosis: A Guide to Diagnosis and Management.* 2004;
Manjaly ZM et al. *J Neurol Neurosurg Psychiatry.* 2019;90:642-651;
Rottoli M et al. *Expert Rev Neurother.* 2017;17:373-379.

Assessment Tools

- Fatigue Severity Scale
- Modified Fatigue Impact Scale
- Fatigue Impact Scale
- Fatigue Descriptive Scale
- Fatigue Scale for Motor and Cognitive Functions

Sellitto G et al. *Expert Rev Pharmacoecon Outcomes Res.* 2021;21:625-646;
Adibi I et al. *J Res Med Sci.* 2022;27:24;
Amato MP, Portaccio E. *Expert Opin.Pharmachother*. 2012;13:207-216.

Fatigue Management

- Exercise
- Address secondary causes
- Medication management
- Cooling techniques
- OT/PT: energy-conservation techniques
- Pacing
- Stress management

Amato MP, Portaccio E. *Expert Opin.Pharmachother*. 2012;13:207-216;
Krupp LB. *Fatigue in Multiple Sclerosis: A Guide to Diagnosis and Management.* 2004;
Tur C. *Curr Treat Options Neurol.* 2016;18:26.

Pharmacologic Treatment

Drug	Dose	Adverse Effects
Amantadine (generic only)	100–200 mg/day	Dizziness/lightheadedness, ataxia, headache, somnolence, dystonia
Modafinil (Provigil®)	200–400 mg/day	Headache, dizziness, paresthesia, somnolence, tremor, taste perversion, vertigo, oro-facial dyskinesia, hyperkinesia, hypertonia

Drugs.com. Amantadine and modafanil side effects.

Pharmacologic Treatment (cont.)

Drug	Dose	Adverse Effects
Methylphenidate (Methylin™, Ritalin®, others)	10–60 mg/day	Insomnia, nausea, headache, vomiting, decreased appetite, xerostomia
Dextroamphetamine (Dexedrine®)	200–400 mg/day	Decreased appetite, reduced weight gain, weight loss, insomnia, nervousness, arrhythmia, palpitations, tachycardia, abdominal pain, cramps, nausea, vomiting, arthralgia, vertigo, dyskinesia, headache, hyperactivity

Drugs.com. Methylphenidate and dextroamphetamine side effects.

Patient Resources

- **Multiple Sclerosis Foundation.**
  Fighting Fatigue

http://www.msfocus.org/article-details.aspx?articleID=48

- **National MS Society.**
  Fatigue: What You Should Know. A Guide for People with MS
  http://www.nationalmssociety.org/NationalMSSociety/media/MSNationalFiles/Brochures/Brochure-Fatigue-What-You-Should-Know.pdf

PAIN

MS-Related Pain Risk Factors

- Older age
- Longer disease duration
- Greater disease severity, more functional impairment
- Comorbid fatigue
- Men and women are equally likely to experience pain, but women tend to have greater severity of pain
- Progressive forms of MS
- Comorbid depression and mental health impairment may increase prevalence of pain perception

O'Connor AB et al. *Pain.* 2008;137:96-111.

Types of Pain

- **Nociceptive Pain**
  - Result of stimulation of nociceptors that signal tissue irritation or injury to elicit appropriate response
  - Might result from musculoskeletal injury, muscle spasm, stiffness, weakness
  - Aching and/or throbbing
- **Neuropathic Pain**
  - Result of injury or malfunction (“short circuit” of nerves carrying pain signals) of peripheral or central nervous system (CNS)
  - Burning, stabbing, sharp, squeezing pain, pins and needles
- **Nociplastic Pain**
  - Occurs when CNS mistakes nonpainful stimulation as painful
  - Pain that arises from damaged tissue that has healed

Kratz AL et al. *Pain.* 2021;162:1426-1433;
Solaro C, Uccelli MM. *Nature Reviews.* 2011;7:519-527.

Pain and Multiple Sclerosis

- Common complaint, wide variability in prevalence reports
- 2013 systematic review and metanalysis of 17 studies found pain affects approximately 63% of patients with MS
- Under recognized and often inadequately managed
- Greater severity and impact on life than in general population
- Associated with anxiety, depression, fatigue
- 2020 online survey of 842 adults with MS and chronic pain found 41% experience nociceptive pain, 27% have mixed neuropathic/nociplastic pain, 23% have nociplastic pain, and 9% have neuropathic pain
- Manageable in most patients

Foley PL et al. *Pain.* 2013;154:632-642;
Solaro C, Uccelli MM. *Nat Rev Neurol.* 2011;7:519-527;
Maloni H. *Pain in Multiple Sclerosis.* National MS Society Clinical Bulletin. 2016;
Kratz AL et al. *Pain.* 2021;162:1426-1433.

Pain Subtypes Common in MS

- Continuous Central Neuropathic Pain
  - Dysesthetic extremity pain
- Intermittent Central Neuropathic Pain
  - Trigeminal neuralgia, Lhermitte's sign, painful tonic spasms
- Musculoskeletal Pain
  - Back pain
- Mixed Neuropathic and Non-neuropathic Pain
  - Headaches

- *Standard pain medications often do not provide relief for MS-related pain*

O'Connor AB et al. *Pain.* 2008;137:96-111;
Maloni H. *Pain in Multiple Sclerosis.* National MS Society Clinical Bulletin. 2016;
Harris CJ, Halper J. *Multiple Sclerosis: Best Practices in Nursing Care.* 5th ed. IOMSN. 2022.

Pharmacologic Treatment: Anticonvulsants

Drug	Dose	Adverse Effects (Very Common, Occurring in >10% of Patients)
Phenytoin (Dilantin®)	300–400 mg/day	Rash, nausea, nystagmus, dizziness, somnolence, ataxia
Gabapentin (Neurotin®, others) Gabapentin ER	1200–3600 mg/day 1200–3600 mg/day	Somnolence, dizziness, ataxia, fatigue, fever
Carbamazepine (Tegretol®, Carbatrol®)	400–1000 mg/day	Nausea, vomiting, constipation, leucopenia, dizziness, somnolence, ataxia, allergic skin reactions, urticaria, elevated gamma-GT (usually not clinically relevant)

Drugs.com. Phenytoin, gabapentin, and carbamazepine side effects.

Pharmacologic Treatment: Tricyclics and Others

Drug	Dose	Adverse Effects
Amitriptyline (Vanatrip, Elavil, Endep)	10–150 mg/day	Tremors, dizziness, headache, dry mouth, constipation, nausea
Pregabalin (Lyrica®)	150–600 mg/day	Dizziness, somnolence, dry mouth, edema, blurred vision, weight gain, difficulty with concentration/attention)
Duloxetine (Cymbalta®)	60–120 mg/day	Nausea, somnolence, headache, dizziness

Drugs.com. Amitriptyline, pregabalin, and duloxetine side effects.

Efficacy of Nonpharmacologic Pain Medications

- In the previously mentioned 2020 online survey, a high frequency of pain medication use was reported—but only poor to modest pain relief
- NSAID use was highest among those with nociplastic pain (80%), but pain relief ratings for NSAIDs were highest among those with nociceptive pain
- Cannabis use for pain was commonly reported by respondents with nociplastic or mixed nociplastic/neuropathic pain, who also reported use of opioids. Patients with mixed pain got more relief from cannabis than those with neuropathic pain

NSAID=nonsteroidal anti-inflammatory drug.
Kratz AL et al. *Pain.* 2021;162:1426-1433.

Nonpharmacologic Treatment Measures

- Stretching to relieve spasticity
- Massage
- Distraction
- Acupressure
- Acupuncture
- Cooling
- Guided imagery
- Chronic pain management program
- Physical and occupational therapy

Recommendations for Effective Pain Management

- Evaluate pain at each clinical encounter
- Recognize and treat comorbidities and psychological factors of anxiety and depression
- Enhance social factors of support and trusting provider relationship
- Use medications that target pain mechanisms
- Consider combining low doses of several medications to achieve greater efficacy with fewer adverse events
- Refer to integrative health and wellness practices

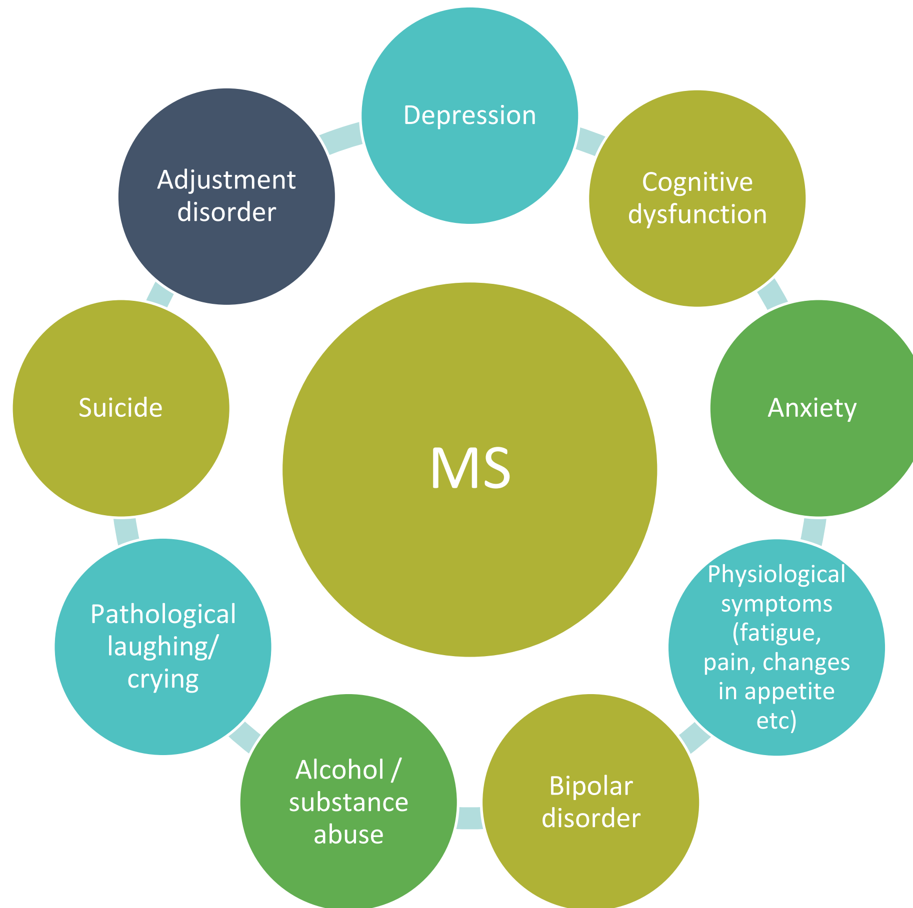
Maloni H. *Pain in Multiple Sclerosis.* National MS Society Clinical Bulletin. 2016.

Patient Resources

- **National MS Society.**
  Pain: The Basic Facts. Multiple Sclerosis
  http://www.nationalmssociety.org/NationalMSSociety/media/MSNationalFiles/Brochures/Brochure-Pain-The-Basic-Facts.pdf

Mental Health and MS

The Burden of Mental Health in MS



Chwastiak LA, Edhe DM. *Psychiatr Clin North Am.* 2007;30:803-817;
Feinstein A et al. *Nat Rev Neurol.* 2014;10:507-517;
Minden SL et al. National Multiple Sclerosis Society Clinical Bulletin. 2014.

Mental Health and MS: Stigma

"The issue of 'stigma' with this disease in some cultures – a perception of disability, and expectation to see the worst outcomes – can contribute to mental-health issues at diagnosis. Education of treatments and their effectiveness at the time of diagnosis is important.

It is also important to have a positive attitude and to hope towards good disease control at diagnosis, when access to treatment is not difficult. While it is very hard to predict who will do well and who will not, it is important to keep a positive discussion alive, early on, and adapt to changes later."

—*Expert Opinion*

COGNITION

Wide Range of MS-Associated Cognitive Disorders

Executive function	Attention	Memory	Visuospatial skills	Information processing	Language
• Difficulty with planning • Difficulty with problem solving • Lack of flexibility • Abstract reasoning difficulties • Inability to control impulses	• Difficulty concentrating for long periods of time • Quick cognitive fatigability • Easily distracted • Difficulty performing multiple tasks at the same time	• Loss of long-term memory • Loss of working memory • Difficulties in retrieving and storing information	• Lack of visual object recognition • Loss of visual discrimination • Mental imagery and navigation problems • Loss of depth perception	• Slow information processing speed • Working memory becomes rapidly overloaded	• Significant difficulty in word-finding ability

Special Interest Group (SIG) on Communication and Swallowing of Rehabilitation in Multiple Sclerosis (RIMS). RIMS publications 2013;

Perrin Ross A et al. *Counseling Points™.* 2013;8.

Cognition and MS

- Possibility of cognitive changes in people with MS must be kept in mind by entire treatment team
- Cognitive impairment may be detected at all stages of MS, including in patients with CIS and RIS
- 34–65% of patients will demonstrate cognitive dysfunction at some point in their illness
- Impairment predicts decreased job performance and altered social skills
- Prevalence increases with age and duration of MS

CIS=clinically isolated syndrome; RIS=radiologically isolated syndrome.

Kalb R et al. *Mult Scler.* 2018;24:1665-1680;
Tremblay A et al. *Brain Cogn.* 2020;146:105650;
Schapiro RT. *Managing the Symptoms of MS.* 6th ed. 2014.

Risk Factors

- Early age of onset
- Male sex
- Gray matter atrophy
- Secondary progressive course
- Low average intelligence
- Smoking
- Inhaled cannabis
- Comorbid depression and anxiety

Benedict RHB, Zivadinov R. *Nat Rev Neurol.* 2011;7:332-342;
Whitehouse CE et al. *Neurology.* 2019;92:e406-e417.

Characteristics of MS-related Cognitive Dysfunction

- Does not correlate with physical disability
- May be subtle
- May be under-recognized or denied by patient, family, friends, or employers
- Deficits are not diffuse or global such as seen in Alzheimer’s disease

Crayton H et al. *Neurology.* 2004;63(11 Suppl 5):S12-S18;
Foley FW et al. *Int J MS Care*. 2014; 16(Suppl 1):33-36.

Prevalence by Cognitive Domain

Domains	
• Memory	30%
• Information processing	25%
• Problem solving	20%
• Visuospatial abilities	20%
• Attention/concentration	10%
• Verbal fluency	10%

One domain: 50% Multiple domains: 22%

LaRocca NG. In: *Multiple Sclerosis Diagnosis, Medical Management, and Rehabilitation.* 2000:405-409.

Effects of Cognitive Changes

- Cognitive changes can complicate medical care, interpersonal relationships, and overall quality of life
- Social/emotional
  - Decreased self-confidence
  - Difficulty following conversations (slowed processing speed)
  - Trouble recognizing faces
  - Personality changes
  - Leads to social isolation, depression
  - Impact on family life
- Personal
  - Difficulties with activities of daily living
  - Misplacing objects

Effects of Cognitive Changes (cont.)

- Vocational/academic
  - Slowed information processing
  - Impaired performance
  - Decreased productivity
  - Difficulty remembering facts
  - Stigmatization
  - Unemployment (50–80% within 10 years of onset)
- Financial
  - Loss of income of the patient
  - Loss of income of the caregivers (time devoted to taking care of the patient)

The ability to think, remember experiences, and make decisions is central to who we are.

Effects of Cognitive Changes (cont.)

Patient’s healthcare and wellness may be impacted by:

- Difficulty understanding directions as they are given
- Problems remembering instructions
- Forgetting to take medications
- Not following treatment instructions carefully, especially if they are complex
- Altered ability to analyze treatment options
- Diminished ability to arrive at a sound decision

Brief, Validated Screening Tools for Cognitive Impairment in MS

- Cognitive assessment should be performed at diagnosis and annually—at a minimum
- Symbol Digit Modalities Test (SDMT), 5 min
  - Most reliable and valid psychometric measure of neuropsychological status
  - In brain imaging research, SDMT has often been the most robust cognitive correlate of brain pathology
  - Included in Brief Repeatable Neuropsychological Battery (BRNB) and Minimal Assessment of Cognitive Function in MS (MACFIMS)
- Processing Speed Test (PST), 5 min
- Computerized Speed Cognitive Test (CSCT), 5 min
- Multiple Sclerosis Neuropsychological Screening Questionnaire (MSNQ), 5 min

Kalb R et al. *Mult Scler.* 2018;24:1665-1680.

Further Cognitive Evaluation

- Neuropsychological testing may include Brief Repeatable Neuropsychological Battery, Minimal Assessment of Cognitive Function in MS, and Brief International Cognitive Assessment for MS
- Practical applications
- Supports employment, legal cases
- Clarifies that problems do or do not exist
- Performed by a neuropsychologist, occupational therapist, or speech/language pathologist

Crayton et al. *Neurology.* 2004;63(11 Suppl 5):S12-S18;
Foley FW et al. *Int J MS Care*. 2014; 16(Suppl 1):33-36;
Kalb R et al. *Mult Scler.* 2018;24:1665-1680.

Managing Cognitive Impairment: Non-Pharmacologic Treatment

- Discuss the problem openly; include family or significant other
- Educate
- Discuss safety issues
- Assess for and treat contributory comorbidities/conditions (depression, pain, fatigue, sleep dysfunction)
- Assess and manage medications
  - Possible benefit from disease-modifying therapy
  - Attention-enhancing medications
    - Modafinil, armodafinil, amphetamine-type medication

Halper J et al. *Comprehensive Care in Multiple Sclerosis: A Core Curriculum.* 3rd ed. 2022;
Foley FW et al. *Int J MS Care*. 2014; 16(Suppl 1):33-36;
Kalb R et al. *Mult Scler.* 2018;24:1665-1680.

Cognition: Treatment and Referral

Mental stimulation
- Can reduce risk of symptoms worsening
- Includes puzzles, games, and cognitive activities

Physical activity
- May improve cognition and everyday function
- Improves quality of life

Occupational therapy
- Helps people with MS maintain independence
- Teaches self-management skills and technology support

Mental health
- Cognitive difficulties may interfere with patients' ability to effectively cope with depression
- Can be treated with psychotherapy

Lifestyle changes
- Smoking cessation recommended, as it may increase progression of disability

Sumowski JF et al. *Neurology.* 2018;90:278-288;
LaRocca NG et al. NMSS. *Managing Cognitive Problems in MS.* 2016;
Ghahari S et al. NMSS. *Occupational Therapy in Multiple Sclerosis Rehabilitation.* 2018;
Special Interest Group (SIG) on Communication and Swallowing of Rehabilitation in Multiple Sclerosis (RIMS). RIMS publications 2013;
National Institute for Health and Care Excellence (NICE) Clinical guideline [CG186]. 2014.

Managing Cognitive Impairment: Non-Pharmacologic Treatment (cont.)

- Recommend:
  - Counseling or psychotherapy
  - Exercise
  - Cognitive rehabilitation for coping and "compensatory strategies"
  - Physical and/or occupational therapy for safety strategies and environmental modifications
  - Financial management, job modification

Halper J et al. *Comprehensive Care in Multiple Sclerosis: A Core Curriculum.* 3rd ed. 2022;
Foley FW et al. *Int J MS Care*. 2014; 16(Suppl 1):33-36;
Kalb R et al. *Mult Scler.* 2018;24:1665-1680.

Patient Resources

- **Multiple Sclerosis Foundation.**
  Cognitive Deficits in Multiple Sclerosis
  https://msfocus.org/Magazine/Magazine-Items/Posted/Cognitive-Deficits-in-Multiple-Sclerosis.aspx
- **Multiple Sclerosis Foundation.**
  9 Strategies to Deal with Cognition Problems
  https://msfocus.org/Magazine/Magazine-Items/Posted/9-Strategies-to-Deal-with-Cognition-Problems.aspx
- **National MS Society.**
  Solving Cognitive Problems: Managing Specific Issues
  https://www.nationalmssociety.org/NationalMSSociety/media/MSNationalFiles/Brochures/Cognitive.pdf

DEPRESSION

Depression in MS

- Up to 50% lifetime risk for major depressive disorder in MS population
- Depression incidence 2–3x greater than in general population
  - 30.5% prevalence in 2017 systematic review of 58 articles, which also found 22.1% prevalence of anxiety
- Presence of symptoms does not correlate well with severity of disability
- Suicide incidence ranges widely: 2.5–28.6%, perhaps reflecting cultural biases against reporting suicide as cause of death

Patten SB et al. *Int Rev Psychiatry.* 2017;29:463-472;
Boeschoten RE et al. *J Neurol Sci.* 2017;372:331-341;
Scalfari A et al. *Neurology.* 2013;81:184-192;
Nathoo N, Mackie A. *Mult Scler Relat Disord.* 2017;18:177-180;
Paparrigopoulos T et al. *Int Rev Psychiatry.* 2010;22:14-21.

Depression in MS (cont.)

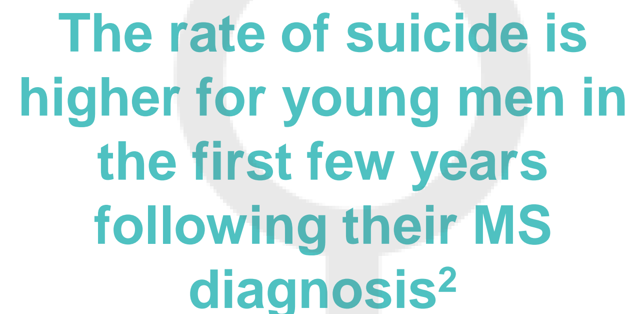
- Some association may exist between depression and certain DMTs
  - Patients should be screened for depression before starting DMTs
- Fatigue, psychomotor retardation, poor concentration, lower cognitive function, sleep and appetite disturbances, overlap both major depressive disorder and MS
- Major depressive disorder is under-recognized, under-diagnosed, and under-treated
- Untreated or under-treated depression can exacerbate other symptoms of MS (eg, pain, fatigue, cognition)

DMTs=disease-modifying therapies.

Patten SB et al. *Int Rev Psychiatry.* 2017;29:463-472; Paparrigopoulos T et al. *Int Rev Psychiatry.* 2010;22:14-21; Majmudar, Schiffer. *Int J MS Care.* 2009;11:154-159; Harris C, Halper J, eds. *Multiple Sclerosis: Best Practices in Nursing Care—Disease Management, Pharmacologic Treatment, Nursing Research.* 5th ed. IOMSN. 2022; Whitehouse CE et al. *Neurology*. 2019;92:e406-e417.

Depression and Anxiety in MS: Gender

- Women with MS face a particularly high risk of depression and anxiety[1]
- However, men with MS face a disproportionately greater risk of developing depression, perhaps due to:[1]
  - Lower perceived levels of social support
  - Lower self-efficacy
  - Fewer health-seeking behaviors
- In those undergoing gender transition, there is a potential role for low testosterone and/or feminizing hormones on MS risk[3]



The rate of suicide is higher for young men in the first few years following their MS diagnosis[2]

1. Marrie RA et al. *Neurology.* 2015;85:1972-1979;
2. Feinstein A et al. *Mult Scler.* 2017;23:923-927;
3. Pakpoor J et al. *Mult Scler*. 2016;22:1759-1762.

Etiology of Mental Health Disorders

- Multifactorial and complex
- Both biological and psychological factors involved
- Living with challenges of MS and symptoms of disease contribute
- Lesions in multiple brain regions have been also implicated in causing depression in MS
  - Left arcuate fasciculus
  - Pre-frontal cortex
  - Anterior temporal lobe and parietal lobes
  - Atrophy in frontal parietal and occipital lobes

Tampi RR et al. *Psychiatr Times.* 2021;38;
Davis BE et al. *Neurol Ther.* 2021;10:99-119.

Clinical Characteristics

- Feeling sad, blue, lack of joy, or empty
- Irritable or crying most of the day
- Loss of energy
- Loss of interest or pleasure in most activities
- Significant change in appetite and weight
- Unusual sleep behavior
- Decreased sex drive
- Suicidal thoughts

Siegert RJ, Abernethy DA. *J Neurol Neurosurg Psychiatry*. 2005;76:469-475;
National MS Society. Depression;
Truschel J. *J Psycom*. 2022.

Screening for Depression

- Most commonly used instrument: Beck Depression Inventory-2nd Edition (BDI-II); cutoff score of 19 has high specificity
  - BDI-Fast Screen (BDI-FS); cutoff of 4 has high sensitivity
- NMSS recommends asking at every visit:
  1. During the past 2 weeks, have you often felt down, depressed, or hopeless?
  2. During the past 2 weeks, have you had little interest or pleasure in doing things?

  If patient responds yes to one or both questions, do further assessment
- Other options: Depression Scale (CES-D), Chicago Multi-Scale Depression Inventory (CMDI)
- Hospital Anxiety and Depression Scale – Anxiety (HADS-A) can be used to assess for anxiety

Strober LB, Arnett PA. *J Clin Exp Neuropsychol.* 2015;37:722-732;
National MS Society. *Mood Changes*;
Newsome SD et al. *Int J MS Care.* 2017;19:42-56.

Screening for Suicide Risk

- Healthcare providers should ask specific and direct questions about:[1]
  - A history of, and/or passive thoughts of, self-harm
  - Access to firearms and other lethal means
- There is no evidence that talking to patients about suicide increases suicidal thoughts[1]
- Asking them will not push them to complete suicide, rather it will help them – and their healthcare provider – to better understand their situation and offer help[2]
- The single most useful step that can be taken with regards to the primary prevention of suicide in MS is better identification and treatment of depressive disorders[3]

1.Kalb R et al. *Curr Neurol Neurosci Rep.* 2019;19:77;
2.Expert opinion;
3.Chwastiak LA et al. *Psychiatr Clin North Am.* 2007;30:803-817.

Patient Perspective

People think depression is sadness. People think depression is crying. People think depression is dressing in black. But people are wrong. Depression is the constant feeling of being numb. Being numb to emotions, being numb to life. You wake up in the morning just to go back to bed again.

HealthyPlace.com

Comprehensive Management

- Provide a supportive, therapeutic environment
- Identify risk factors (screening, self-report, environmental factors, family history)
- Combination psychotherapy and antidepressants
- Wellness focus (exercise)
- Be alert for suicidal ideation/plan
- Assess and reassess continually
- Adjust medications appropriately
- Refer to psychiatry as appropriate

Bashir K, Whitaker JN. *Handbook of Multiple Sclerosis*. 2002;
Patten SB. *Int J MS Care* 2009;11:174-179.

Treatment

- Ideally – psychiatrist, psychologist, social worker
- Psychotropic medications: SSRIs and SNRIs
- Psycho-therapeutic interventions:
  - CBT
  - Mindfulness-based CBT
  - Acceptance and commitment therapy
  - Meditation/yoga
  - Spiritual therapy

CBT=cognitive behavioral therapy; SNRIs=serotonin norepinephrine reuptake inhibitors; SSRIs=selective serotonin reuptake inhibitors.

Patten S et al. *Int Rev Psychiatry.* 2017;29:463-472;
Asqari S, Donyavi R. *J Nurs Midwifery Sci.* 2017;4:125-129.

Meditation, Mindfulness, Exercise

Meditation and Mindfulness

- Combat stress by encouraging patients to be present in their thoughts/feelings, and not to be overwhelmed by triggers
- Improve health-related QoL (HRQoL) in patients with MS[1,2]—independent of neuropsychological status, gender, disease-modifying therapies[1]

Exercise

- Improve MRI outcomes and other brain markers in MS[3]
- Potential to reduce depressive symptoms[4]
- Myriad benefits for people with MS, including:[5]
  - Improved mood
  - Reduced pain
  - Better QoL
  - Reduction in fatigue
  - Increased sexual and psychosocial function
  - Improved recreational satisfaction

1. Grossman P et al. *Neurology.* 2010;75:1141-1149.
2. Levin AB et al. *Neurol Res Int.* 2014;2014:704691.
3. Negaresh R et al. *Eur J Neurol.* 2019;26:711-721.
4. Dalgas U et al. *Eur J Neurol.* 2015;22:443-e34.
5. Chwastiak LA et al. *Psychiatr Clin North Am.* 2007;30:803-817.

Building Resilience

- Normalize discussions of mental health at routine MS care visits
- Advise that professional help exists and can be beneficial
- Resiliency building is an important component of patient-driven care
- Higher resilience can reduce risk of psychiatric symptoms and maintain quality of life in people with MS
- Vital aspect of resiliency building is maintaining social connection and social support from significant others, family members, close friends, neighbors, worship communities
- In absence of adequate social supports, online communities can be helpful

Koelmel E et al. *Arch Phys Med Rehab.* 2017;98:1139-1148;
Davis BE et al. *Neurol Ther.* 2021;10:99-119.

Pharmacologic Treatment: SSRIs

SSRIs	Dose	Common Adverse Effects
Fluoxetine (Prozac® and others)	20–80 mg/d	Insomnia, asthenia, headache, somnolence, tremor, anxiety, nervousness, nausea, diarrhea, dry mouth, rhinitis, pharyngitis, yawning, anorexia, diminished libido, flu syndrome
Sertraline (Zoloft®)	25–200 mg/d	Nausea, abdominal pain, agitation, diarrhea, dizziness, dry mouth, dyspepsia, ejaculation failure, fatigue, headache, hot flushes, insomnia, nausea, nervousness, palpitation, somnolence, tremor
Paroxetine (Paxil® and others)	20–50 mg/d	Nausea, ejaculation disturbance/abnormal ejaculation, somnolence, asthenia
Citalopram (Celexa®)	20–40 mg/d	Drowsiness, ejaculatory disorder, nausea, insomnia, diaphoresis
Escitalopram (Lexapro®)	10–20 mg/d	Diarrhea, drowsiness, ejaculatory disorder, headache, insomnia, nausea, delayed ejaculation

Schapiro RT. *Neurorehabil Neural Repair*. 2002;16:223-231;
Medline Plus Drug Information; Drugs.com, drug side effects.

Pharmacologic Treatment: SNRIs

SSRIs	Dose	Common Adverse Effects
Venlafaxine (Effexor®)	75–225 mg/d	Anorgasmia, asthenia, constipation, dizziness, drowsiness, insomnia, nausea, nervousness, headache, anorexia, decreased appetite, delayed ejaculation, diaphoresis, xerostomia
Duloxetine (Cymbalta®)	40–60 mg/d	Asthenia, constipation, diarrhea, dizziness, drowsiness, fatigue, hypersomnia, insomnia, nausea, sedated state, headache, xerostomia

Schapiro RT. *Neurorehabil Neural Repair*. 2002;16:223-231;
Medline Plus Drug Information; Drugs.com, drug side effects.

Patient Resources

- **Multiple Sclerosis Foundation.**
  The Many Shadows of MS Related Depression

https://msfocus.org/Magazine/Magazine-Items/Posted/The-Many-Shadows-of-MS-Related-Depression.aspx

- **Multiple Sclerosis Foundation.**
  Caring for Your Emotional Health

https://msfocus.org/Magazine/Magazine-Items/Posted/Caring-for-Your-Emotional-Health.aspx

- **National MS Society.**
  Depression & Multiple Sclerosis

http://www.nationalmssociety.org/NationalMSSociety/media/MSNationalFiles/Brochures/Brochure-Depression.pdf

NURSING IMPLICATIONS

Nursing Implications

- Acknowledge that many MS symptoms overlap
- Educate patients regarding role of contributing factors (medications, infections, heat, deconditioning, etc)
- When a symptom is new or suddenly worsens, re-evaluate for contributing factors both internal (disease activity) and external (environmental issues)

Nursing Implications

- Lifestyle matters! Reinforce importance of exercise, nutrition, stress management, smoking cessation, adequate sleep
- Gauge impact of symptom(s) on patient's lifestyle before recommending treatment
- Lifestyle modifications may be all that are needed/desired to address symptom(s)

Nursing Implications (cont.)

- When possible, include family/loved ones in the discussion
- Up to 80% information given at an office visit is forgotten as soon as a patient leaves the office
- Provide more than one form of instruction, especially when cognitive impairment is suspected (verbal, written, handouts, website information)