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PUTTING THE FOCUS ON MULTIPLE SCLEROSIS

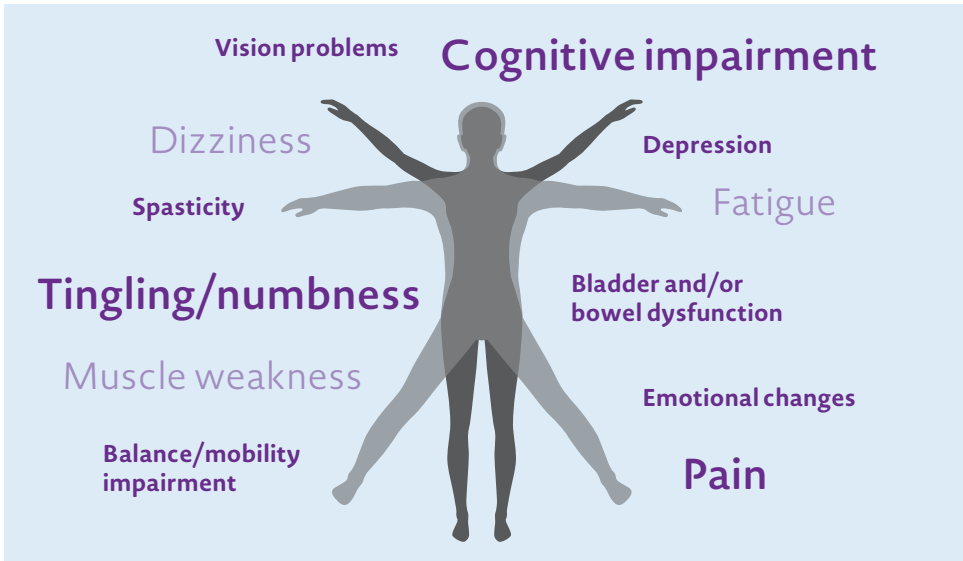
UNDERSTANDING THE IMPACT
OF COMPLEX CHRONIC DISEASES
BEYOND DIABETES AND HYPERTENSION

WHAT IS MULTIPLE SCLEROSIS (MS)?

MS IS A CHRONIC DISEASE OF THE CENTRAL NERVOUS SYSTEM THAT CAUSES A VARIETY OF DISABLING SYMPTOMS¹

- In MS, the body's immune system attacks parts of the brain, spinal cord, and optic nerves, causing **irreversible nerve damage** and brain lesions visible on MRI²
- People with MS may experience any combination of the **following symptoms**, which can last for days, weeks, or months^{3,4}

Common Symptoms of MS³



- These symptoms may be severe enough to **lead to hospitalizations**⁵
- Many patients experience **relapses** followed by **remissions**, so these symptoms can change over time⁶

RELAPSES

Periods when symptoms flare up and physical function worsens

REMISSIONS

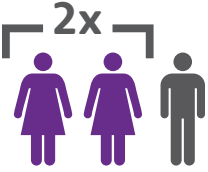
Periods when symptoms completely or partially disappear

OVER TIME, PATIENTS EXPERIENCE **PERSISTENT AND WORSENING SYMPTOMS**, WHICH MAY LEAD TO DISABILITY⁷

MRI=magnetic resonance imaging.

WHO GETS MS?

MS PRIMARILY IMPACTS WORKING-AGE ADULTS²



- Most people with MS are diagnosed between the ages of **20 and 40 years**, during their peak working years²
- MS is 2 to 3 times more common in women than in men⁸

ALTHOUGH PREVALENCE IS LOW, MANY INDIVIDUALS ARE NEWLY DIAGNOSED WITH MS EACH YEAR

- It has been estimated that more than **400,000** people in the US have MS⁹
- Approximately **10,000 new cases** are diagnosed each year²

RISK FACTORS ASSOCIATED WITH MS¹⁰

The cause of MS is not known; however, some risk factors include

- Family history
- Ethnicity (more common in Caucasians)
- Certain autoimmune diseases (ie, thyroid disease, type 1 diabetes, inflammatory bowel disease)
- Temperate climate (MS is more common in the northern United States)

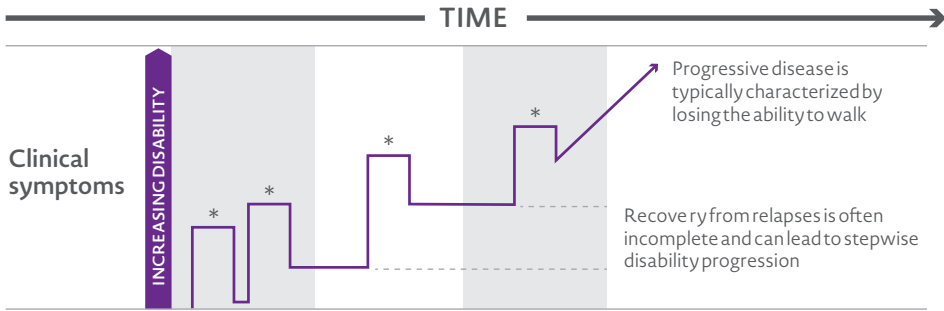
HAVE YOU ASSESSED HOW MANY
OF YOUR MEMBERS HAVE MS?

WHAT IS THE IMPACT OF MS ON YOUR MEMBERS?

INCOMPLETE RECOVERY FROM RELAPSES CAN LEAD TO SUSTAINED PROGRESSION OF PHYSICAL DISABILITY^{2,11}

- After a relapse, symptoms may disappear or **may only partially resolve**⁴
- Over time, symptoms that persist may worsen and may **eventually lead to sustained disability**^{2,4}

Progression of MS Over Time⁶



*Relapse.

Brain lesions may develop even when clinical symptoms are not present. Thus, periodic MRIs can be an important tool to help monitor disease progression²

According to the National MS Society, two-thirds of patients with MS remain able to walk though many may need assistance from¹¹:



Cane or crutches¹¹



Wheelchair or scooter to preserve energy due to fatigue, weakness, or balance issues¹¹

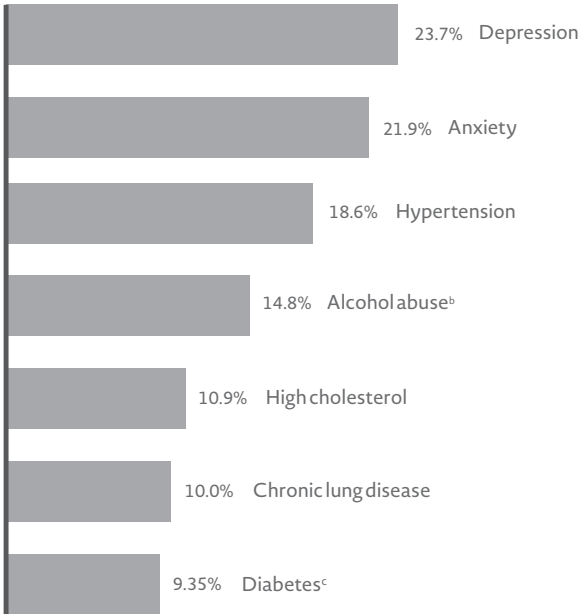
People with MS may eventually need the **assistance of a caregiver** to help with daily functions¹²

PERIODIC MRIs CAN BE AN IMPORTANT TOOL TO HELP MONITOR DISEASE PROGRESSION²

WHAT ARE THE ADDITIONAL HEALTH RISKS IN PATIENTS WITH MS?

COMORBID CONDITIONS ARE COMMON, AND SOME MAY WORSEN THE IMPACT OF MS, LEADING TO POOR OUTCOMES¹³

According to One Meta-analysis, Prevalence of Comorbidities With MS^{14,a}



- Some comorbidities—such as hypertension, type 2 diabetes, dyslipidemia, peripheral artery disease, and vascular diseases in general—may be associated with **greater disability progression**¹⁵
- A separate study found that higher levels of depression and increased anxiety were associated with **reduced productivity**^{16,d}

With many patients requiring additional specialists to manage the comorbidities, **coordination of care is a key element of comprehensive care for MS**¹³

^aIncludes 249 population-based studies from 1905 to 2012 in Europe, North America, Asia, Australia, New Zealand, and South America.¹⁴

^bBecause this is from only 1 study, meta-analysis not possible.¹⁴

^cType 1, type 2, and unspecified diabetes.¹⁴

^d377 subjects with MS selected from the Comprehensive Longitudinal Investigation of Multiple Sclerosis at the Brigham and Women's Hospital, Partners MS Center (CLIMB) study.¹⁶

WHAT ARE THE COSTS ASSOCIATED WITH MS?

MS IS COSTLY DESPITE THE LOW PREVALENCE OF THE DISEASE^{1,17}

In 2009, it was estimated that the total annual cost of MS in the United States was **\$28 billion**¹⁷



THE COST BURDEN BEGINS EARLY IN THE DISEASE AND RISES WITH RELAPSE SEVERITY^{5,18}

In a retrospective claims analysis from 2004 to 2006, newly diagnosed people with MS had a **higher utilization of health services** than healthy people^{5,*}

3.5x
HIGHER RATE
of hospitalizations⁵

2.1x
MORE VISITS
to the ED⁵

2.4x
HIGHER USE
of rehabilitation services^{5,†}

Compared with patients who have MS without a relapse, the **direct health care costs**[‡] were¹⁸:

2.2x
HIGHER
for patients with mild or moderate relapse¹⁸

3.3x
HIGHER
for patients with severe relapse¹⁸

ED=emergency department.

^aIndirect costs typically include lost or reduced work performance and informal care.¹⁹

^bDirect costs include direct payments to health care providers for health resource utilization and pharmacy benefits.¹⁹

^{*}In a 2004-2006 retrospective claims analysis, the “healthy comparison cohort” were healthy people without MS diagnoses or treatment using the following variables: region, insurance type, gender, relation to employee, age, and enrollment period. Any condition listed in the Charlson Comorbidity Index was excluded from both the MS and “healthy comparison” cohorts.⁵

[†]Study derived data from a US insurance claims and employee disability database (OptumHealth Reporting and Insights Database) between 1999 and 2011 (n=9421). Direct health care costs include inpatient, outpatient, emergency room, and disease-modifying drug costs.¹⁸

[‡]At least 1 physical, occupational, or speech therapy session.

WHAT IS THE EFFECT OF MS IN THE WORKPLACE?

REDUCED WORK PERFORMANCE AND LOWER ATTENDANCE MAY BE ASSOCIATED WITH MS¹⁶



In one survey of 274 patients with MS who were working*

- **46.5% reported presenteeism** (impairment while working), and **13.9% reported absenteeism**¹⁶
- A **large portion of work-productivity losses** were due to disability, fatigue, depression, and anxiety¹⁶

INDIVIDUALS WITH MS MAY REQUIRE MORE DISABILITY DAYS

In a claims analysis of 17 privately insured US companies between 1999 and 2006[†]

- Individuals with MS had **6x as many disability days** (short- and long-term disability) per year when compared with employees without MS (29.8 vs 4.5 days; $P < 0.0001$)²⁰
- **Costs** for disability days and medically related **absenteeism were 4x as high** for employees with MS when compared with employees without MS²⁰

HAVE YOU EVALUATED THE TOTAL COST OF MS IN YOUR ORGANIZATION?

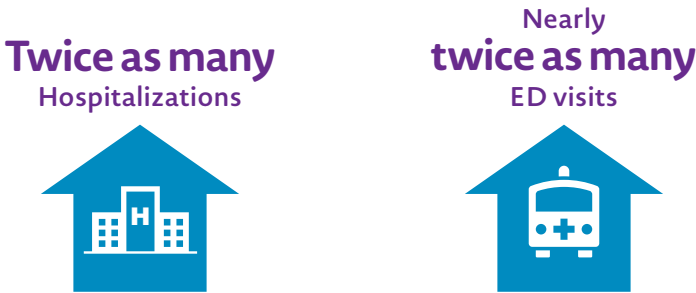
*Patients with relapsing-remitting MS (94.7%) or clinically isolated syndrome (CIS) (5.3%), selected from the Comprehensive Longitudinal Investigation of Multiple Sclerosis at the Brigham and Women's Hospital, Partner's MS Center CLIMB study from July 2010 to November 2011 (n=274). CIS is a first episode of neurologic symptoms; a portion of patients with CIS develop MS.¹⁶

[†]Companies employed 3.7 million lives from 1999 to 2006. Disability data were from employees with an MS diagnosis on or after January 1, 2002.²⁰

WHAT IS THE IMPACT OF MS ON CAREGIVERS?

HEALTH COMPLICATIONS AND HOSPITALIZATIONS ARE MORE COMMON IN MS CAREGIVERS THAN IN NONCAREGIVERS²¹

A self-reported online survey in 2009 found that, compared with noncaregivers, caregivers of patients with MS report²¹

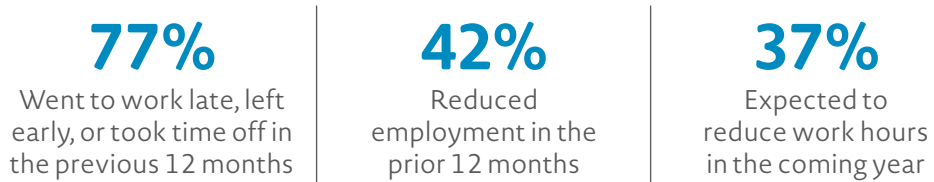


Compared with noncaregivers, MS caregivers reported²¹

- Higher use of prescription drugs for **depression** (16.7% vs 11.6%)
- Higher incidence of sleep **difficulties** (38.6% vs 29.0%)

SOME MS CAREGIVERS HAVE REPORTED NEGATIVE IMPACT ON WORK STATUS^{22,*}

In a 2007 survey of 530 people who provided informal care to someone with MS



WHAT DO MEMBERS WITH MS AND THEIR CAREGIVERS NEED TO DO?

MEMBERS WITH MS SHOULD SEEK A PROPER DIAGNOSIS AND APPROPRIATE CARE

While there are no formal guidelines for MS management, members should seek out quality care and follow the advice of their health care provider. Examples of what members may be advised to do include:

- Schedule and attend appointments regularly with their **health care provider**
- **Take medications** as prescribed, even if symptoms seem under control
- Undergo **regular testing** as recommended
- **Report** any new or worsening **symptoms** to their health care providers; call at the first sign of a relapse
- Arrange care from **other health care providers** to help manage symptoms and restore or maintain daily activities
- Incorporate **physical activities** and other **lifestyle modifications**

CAREGIVERS SHOULD ALSO SEEK THE CARE THEY NEED FOR THEMSELVES



Learn the important roles and responsibilities of a caregiver



Seek diagnosis and management of their own health conditions



Join a support group(s) to learn from the experiences of other caregivers

MEMBERS WHO HAVE MS OR WHO ARE CAREGIVERS MAY BENEFIT FROM **EDUCATION** AND **ACCESS TO THE CARE THEY NEED**

WHAT SHOULD AN EMPLOYER DO?

BE SURE YOUR MEMBERS WITH MS AND THEIR CAREGIVERS HAVE ACCESS TO THE SUPPORT AND CARE THEY MAY NEED

STEP 1: Talk to your benefits partners about the **right plan design** for your members and caregivers to ensure access to appropriate care



Members with MS may need access to:

- A wide **range of health care providers** who specialize in MS and its complications
 - **Neurologists**, neuropsychologists, physical therapists, occupational therapists, speech pathologists, and urologists



- **Periodic testing** to monitor disease progression and to ensure the management plan is working
 - Imaging services (eg, MRI)
 - Disability assessments



- **Medications**, including **specialty medications**, which may reduce relapse rate and severity and slow disease progression



- **Physical and/or occupational therapy** to improve daily functions
- **Behavioral health management** for mental and emotional well-being



Caregivers of patients with MS may need access to:

- **Health care providers and medications** for their own health conditions
- **Behavioral health professionals** to help them cope with and overcome mental/emotional stress
- **MS support groups** for help with improving the caregiving experience for both the caregiver and the person with MS

STEP 2: Provide your members with **relevant educational resources**



- To help those with MS better manage their condition
- To help those who are caregivers support their loved ones and also care for themselves

The National Multiple Sclerosis Society is an organization dedicated to MS research, advocacy, and education.



www.nationalmssociety.org

The National MS Society has a number of educational brochures for both patients and caregivers.

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