

Understanding Relapsing Forms of Multiple Sclerosis

Multiple sclerosis (MS) is a chronic inflammatory disease of the central nervous system (CNS) characterized by myelin destruction and axonal damage of the brain, optic nerves and spinal cord.¹



MS affects ~2.3 million people worldwide and ~400,000 in the United States.^{2,3}



The average age of MS onset is 30 years; in the United States, MS is 3x more prevalent in women than men.³

There are four main types of MS: clinically isolated syndrome (CIS), relapsing remitting (RRMS), secondary progressive (SPMS) and primary progressive (PPMS).⁴ The various forms of MS can be distinguished based on whether a patient experiences relapses (clearly defined acute inflammatory attacks of worsening neurological function), and/or whether they experience progression of neurologic damage and disability from the onset of the disease.¹

Relapsing forms of MS (RMS) include CIS, RRMS and active SPMS

CIS

CIS is defined as a first episode of neurologic symptoms that lasts at least 24 hours and is caused by inflammation or demyelination in the CNS.⁵

RRMS

85% of people with MS have RRMS, characterized by clearly defined episodes of relapses and remissions (periods of partial or complete recovery).¹

Active SPMS

Up to 80% of patients with RRMS will develop SPMS. Active SPMS is characterized by physical and cognitive changes over time, in presence of relapses, leading to a progressive accumulation of neurological disability.^{1,3}

How is disease progression monitored?

Several different measures are commonly used in clinical trials to monitor MS disease progression and help evaluate the effect of potential new therapies.

Relapses

- The annualized relapse rate (ARR) estimates the average number of relapses a group of patients experienced over a year.⁶

Imaging of Lesions

- Magnetic resonance imaging (MRI) scans can assess disease activity in the brain by detecting areas of inflammation and scarring, or lesions.⁸

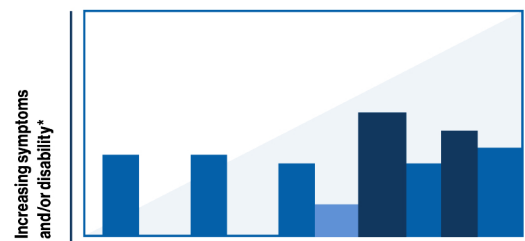
Disability Worsening

- A sustained change in a person's expanded disability status scale (EDSS) score – which quantifies disability – can be considered confirmed disability worsening (CDW), a measure that helps determine disease progression over time.^{9,10}

Treatment

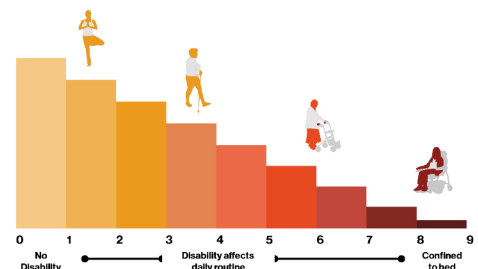
Early initiation of high-efficacy MS therapies may improve long-term outcomes.¹¹

Relapse frequency varies depending on the type of MS**



**Graph depicts relapse pattern in Relapsing-Remitting Multiple Sclerosis (RRMS)
*Adapted from MSAA, Types of Multiple Sclerosis. <https://www.nationalmssociety.org/What-is-MS/Types-of-MS>. Accessed April 15, 2020

EDSS (Expanded Disability Status Scale)*



*Adapted from Kurtzke J. Rating neurologic impairment in multiple sclerosis: An expanded disability status scale (EDSS). *Neurology*. 1983;33(11):1444-52

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