

# ABOUT MULTIPLE SCLEROSIS

EMD  
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## Fast Facts

- Multiple sclerosis (MS) is an autoimmune, chronic inflammatory condition of the central nervous system (CNS) and is the leading cause of non-traumatic, neurological disability in young adults.<sup>1,2</sup>
- MS affects nearly one million people in the U.S.<sup>3</sup>
- Relapsing remitting MS (RRMS) is the most common form of MS, and around 85% of people with MS are diagnosed with this type.<sup>4</sup>
- The exact cause of MS is unknown but it is thought that the body's own immune system targets the CNS and causes damage to important cells and tissues, disrupting the information flow along the nerves.<sup>5</sup>
- There is currently no cure for MS, but treatments are available to help slow the progression of disability associated with the disease.<sup>6</sup>

## Symptoms

The **symptoms of MS vary widely from person to person** and can affect any part of the body.<sup>7</sup>

Common Symptoms of MS include:<sup>6</sup>

-  Fatigue
-  Difficulty walking
-  Vision problems, such as blurred vision
-  Incontinence
-  Numbness or tingling in different parts of the body
-  Muscle spasms
-  Problems with balance and coordination
-  Problems with thinking, learning and planning

MS produces significant physical disability within 20 to 25 years in more than 30% of patients.<sup>8</sup>

## Cause

MS is an autoimmune disease, where it is believed that **the body's immune system attacks the myelin** (an insulating coating around the nerve cells)<sup>6</sup> in the CNS, and the nerve fibers themselves, which interferes with the transmission of nerve signals between the brain and spinal cord and other parts of the body.<sup>5</sup>

- Evidence shows that a combination of genetic and environmental factors may trigger the disease.<sup>6</sup>

MS causes the myelin sheath to become inflamed in patches (**plaques or lesions**) and these patches of inflammation can disrupt information flow along the nerves, leading to the symptoms and signs of MS.<sup>6</sup>

- It is thought that when the inflammation subsides, it can result in scarring of the myelin sheath (**sclerosis**). The attacks, particularly if frequent and repeated, can eventually lead to permanent damage to the underlying nerves<sup>6</sup>

## How common is MS?

 2.3 million people suffer from MS  
**WORLDWIDE**<sup>3</sup>

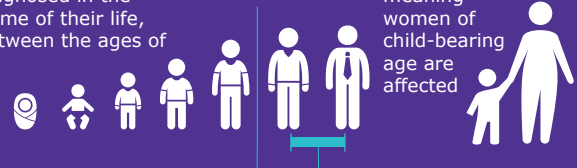
 **ABOUT 15%**     
of those with MS also have a relative with MS<sup>6</sup>

  Incidence of MS is **More than twice as high** in women compared with men<sup>6</sup>

Most people are diagnosed in the prime of their life, between the ages of

**20 & 40**<sup>6</sup>

Often meaning women of child-bearing age are affected



## Types of MS

- **Clinically Isolated Syndrome (CIS)** refers to a first episode of inflammatory demyelination (loss of myelin) in the CNS that could become MS if additional activity occurs.<sup>4</sup>
- Patients with **secondary-progressive MS (SPMS)**, experience a progressive worsening of neurologic function over time, with or without periods of remission.<sup>4</sup>
- **Primary progressive MS (PPMS)** causes people to experience worsening neurologic function from the onset of symptoms, without any early remission/relapse cycles.<sup>4</sup>

**Relapsing-remitting MS (RRMS)** is characterized by attacks of new or increasing neurological symptoms. New symptoms may be partially or completely resolved.<sup>4</sup>



of people with MS are initially diagnosed with **RRMS**

## Diagnosis<sup>6</sup>

- Diagnosing MS is complicated because no single test can positively diagnose it – other possible causes may need to be ruled out first.
- Some of the tests used to confirm MS include neurological examinations, magnetic resonance imaging (MRI) scans, as well as lumbar punctures.
- Once a diagnosis of MS has been made, the type of MS can often be identified based on:

**The pattern of symptoms** – such as whether people experience relapses, remissions, or whether symptoms progressively worsen.

**The results of an MRI scan** – such as whether there is evidence that lesions have developed at different times and at different places in the body.

## Burden of Disease

- MS is associated with a substantial clinical and economic burden on patients, caregivers and the healthcare system, and is more pronounced in patients with greater disability.<sup>9</sup>
- The burden of MS includes multiple factors, such as unemployment, disability and life expectancy reduction.
  - » **50%** of MS patients may become unemployed within **10 years following diagnosis**<sup>10</sup>
  - » Approximately **20%** of MS patients may require a **wheelchair, crutches or a cane after 15 years of diagnosis**<sup>11</sup>
  - » On average, life expectancy is **reduced by approximately 7 years** compared to the general public<sup>12</sup>

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