Multiple Sclerosis (MS)

Multiple sclerosis (MS) is a highly complex disease of the central nervous system (brain, spinal cord and visual pathways). In MS, the body’s immune system attacks certain tissues such as myelin (the insulation on brain cells and spinal cord nerve fibers), the cells that make myelin, and the nerve fibers—leading to substantial cognitive and physical impairment.

Today:

- More than 400,000 Americans are living with multiple sclerosis (MS). Over 70% are women.
- MS is the most common debilitating neurological disease among young people under the age of 35.
- Within 25 years of diagnosis, almost 90% of patients with the most common form—relapsing-remitting MS—will develop secondary progressive MS, a much more aggressive form of the disease.
- People with MS are more than twice as likely as the general population to die prematurely from cardiovascular disease, respiratory disease, infections, depression, and suicide.

The Cost:

- The average annual cost of care for someone with MS is nearly $69,000.
- Total lifetime direct and indirect costs for a person with MS average nearly $1.2 million.
- In the U.S., the total direct and indirect medical costs for all MS patients amount to $2.5 billion per year.
- For individuals with MS, the likelihood of unemployment grows by 3% each year after diagnosis.

HOW RESEARCH SAVES LIVES:

- Natalizumab has been shown to reduce MS relapses by 68% and to stop MS from progressing in over 40% of patients, adding quality— and years—to patients’ lives.
- Patients in the initial stage of MS, called clinically isolated syndrome (CIS), who receive first-line MS medications are 50% less likely to develop clinically definite MS than patients with CIS who do not start treatment.
- Gadolinium-enhanced magnetic resonance imaging (MRI) has allowed physicians to spot MS earlier and track its progression more accurately, improving diagnosis and treatment for patients.

HOW RESEARCH SAVES MONEY:

- Alemtuzumab has been shown to reduce annual relapse rates in nearly 70% of patients and to slow the progression of disability in almost 60% of patients, allowing them to work longer and increasing their productivity.
- Early and consistent treatment for MS can significantly slow its progression and reduce later disability, reducing hospitalizations and the overall costs of care.
- Increasing patients’ adherence to treatments can substantially reduce the costs of care. Patients with MS who take their medication at least 80% of the time have 30% lower healthcare costs than patients with MS who adhere to their treatment plan less than 40% of the time.

Emily Reilly is fueled by a simple mantra: “Keep moving.” During soccer practice when she was 15, Emily felt a peculiar tingling sensation on her skin and the feeling of electricity down her spine whenever she bent her neck. Two years later, after accepting a college scholarship to play soccer, Emily started having more symptoms of MS and was diagnosed with relapsing-remitting MS.

Emily had two options: “to persevere in my dreams or to quit. And quitting is never an option for me.” Emily faced her disease head on, assisted by her MS specialist and strict adherence to her treatment. Her resolve allowed Emily to keep playing soccer and to become an All-American athlete in her freshman year despite periodic MS flare-ups and even the brief loss of vision.

After college, Emily began developing and leading fitness classes designed specifically for people with mobility impairments, using her simple mantra to help others with MS and mobility issues to keep moving. For Emily, staying active and adhering to treatment are the best ways to prevent MS flare-ups and prevent the cognitive and physical disability that can affect people with MS.

Emily is doing her part to fight MS, as a patient, as a care provider, and as an advocate working with the National Multiple Sclerosis Society. Although we have made considerable progress in treating MS, Emily and the MS community are waiting for a cure, which Emily knows will only be possible with more research and clinical trials.

Emily doesn’t “even know what [her] life would look like without MS.” But Emily will continue to keep moving, and hopes that researchers do, too, because on further reflection, Emily does know what life would look like without MS: “freedom.”

Mary Lasker 1901-1994

“If you think research is expensive, try disease.”

Mary Lasker

Facts and figures:

- Multiple sclerosis is the most common and disabling neurological disease among young people under the age of 35.
- MS is the most common chronic neurological disease among young women.
- Recent studies have shown that MS patients who receive adequate treatment can experience significant improvements in their quality of life.
- People with MS are more than twice as likely as the general population to die prematurely from cardiovascular disease.

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Hope for the Future:

- Several promising new drug candidates, such as ozanimod, are currently in phase III clinical trials. These new drugs treat MS by preventing damaging immune cells from moving into inflamed areas of the brain and causing further inflammation and damage.¹

- Researchers at the University of California at San Francisco have found that clemastine—a common over the counter antihistamine—can prompt the brain to repair the myelin insulation around nerves that is stripped away in MS. This could help prevent MS from progressing and allow many patients to recover lost mobility and cognition.²

- Researchers in a phase II clinical trial have, for the first time, been able to stop MS and reverse the progression of disability. This treatment wipes out a patient’s immune system and then reboots it with the patient’s own stem cells and, though still experimental, holds great promise.³

The Bottom Line:

Multiple Sclerosis is a complex, chronic disease for which there is no cure. Researchers have not yet discovered the root cause or causes of MS; however, they believe the disease may arise from the interaction of several different factors, including individual biology and genetics, environment, and early life exposure to certain viruses. To date, over 200 different genes have been associated with MS, highlighting its complexity. While limited treatment options for MS have emerged in the last 30 years, more research is urgently needed to combat, and ultimately cure, this debilitating and costly disease.