

Brain, Body, Spirit

By Katy Mena

Throughout life we learn about habits that can help us stay healthy. We know that eating fruits and vegetables, exercising regularly, wearing sunscreen, and staying away from tobacco can help protect our hearts, skin, and lungs. But actively protecting the nervous system? That is far more elusive.

The term “neurological disorder” refers to any condition that directly affects the brain, spinal cord, or nerves. Neurological disorders are among the most mysterious conditions that affect the human body—and they are also far more common than one might imagine.

Taking a Closer Look at Neurological Disorders

According to the World Health Organization, neurological disorders like Alzheimer’s disease, epilepsy, and migraine headaches impact hundreds of millions of individuals around the globe. The U.S. National Library of Medicine and National Institutes of Health report that there are more than 600 different types, and they are caused by a variety of factors including defective genes, infections, and injuries to the brain and spinal cord.

Thanks to modern technologies such as magnetic resonance imaging (MRI), electroencephalography (EEG), and genetic testing, doctors now have tools to make diagnoses that were impossible 100 years ago. If a patient has trouble moving, speaking, breathing, learning, or thinking, a physician may look to the possibility of one of the major neurological diseases. Here is a closer look at some of the most common neurological disorders.

Migraine Headaches

Characterized by nausea, dizziness, tingling skin, and sensitivity to light, a migraine is not your average headache. The pain can often be debilitating, forcing sufferers to retreat to a dark room for hours at a time.

Impacting roughly 35 million Americans, migraines tend to be passed down through genes. So if you suffer from these excruciating headaches, chances are your mom or dad did, too.

According to the University of California San Francisco, migraines occur most

frequently in females between the ages of 35 and 45. About 18% of American women experience these headaches as opposed to only 6% of American men.

Migraines affect everyone differently and can be triggered by a number of things like stress, menstruation, flashing lights, strong odors, food additives, alcohol, pressure changes, and certain medications. Treatment usually involves keeping a journal to identify habits or environmental factors that may be causing your headaches.

For treatment, The Mayo Clinic says pain relievers such as naproxen can help relieve symptoms. In addition, certain cardiovascular drugs, anti-seizure drugs, or antidepressants may be used for prevention.

Alzheimer’s Disease

The idea of losing memory and mental abilities is a frightening one. But it is a reality that impacts many Americans living with Alzheimer’s disease.

Alzheimer’s is a progressive disease that occurs when abnormal deposits of protein form plaques in the brain. The result is a destruction of neurons, which impacts the ability to think and remember.

Alzheimer’s occurs in three stages, worsening with time. A patient may experience no symptoms for several years before experiencing cognitive impairment and eventually dementia (loss of cognitive functioning and behavioral abilities to the extent that it interferes with daily life).



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Seizures
vs. Epilepsy

“Seizures are episodes of abnormal brain activity with manifestations ranging from staring spells to convulsions. Epilepsy is a neurologic syndrome with recurrent, unprovoked episodes of seizures. The two should not be confused. For example, some patients have brief childhood convulsions called febrile seizures. These do not typically represent epilepsy because they are incited by a febrile illness and lack additional symptoms. However, prolonged febrile seizures combined with unprovoked seizures and developmental delay can be the components of an epilepsy syndrome.”

Lewis M. Miller
III, M.D.,
Pediatric
Neurology,
Children’s Hos-
pital at Erlanger



There is no known cure for Alzheimer’s, but doctors and researchers are making progress. According to the Mayo Clinic, two drugs—cholinesterase inhibitors and memantine—have been approved by the Food and Drug Administration (FDA) to treat Alzheimer’s symptoms like memory loss, trouble reasoning, changes in personality, and delusions.

Because Alzheimer’s is so prevalent, finding a cure is currently a top priority for medical researchers. According to the National Institute on Aging (NIA), the disease impacts approximately 5.1 million Americans. Since it predominantly affects people 65 and older, the National Institute on Aging (NIA) predicts that the occurrence of Alzheimer’s will increase as the elderly population grows.

Epilepsy

The wiring of the brain is similar to the wiring in our homes—distorted or overloaded signals can cause a loss of functionality or even a crash. For people with epilepsy, that “crash” can cause seizures characterized by convulsions, muscle spasms, and sometimes, a loss of consciousness.

A person who has had two or more unprovoked seizures is considered to have epilepsy, the fourth most common neurological disorder in the United States. The condition occurs when clusters of nerve cells in the brain send abnormal signals that affect movements and consciousness.

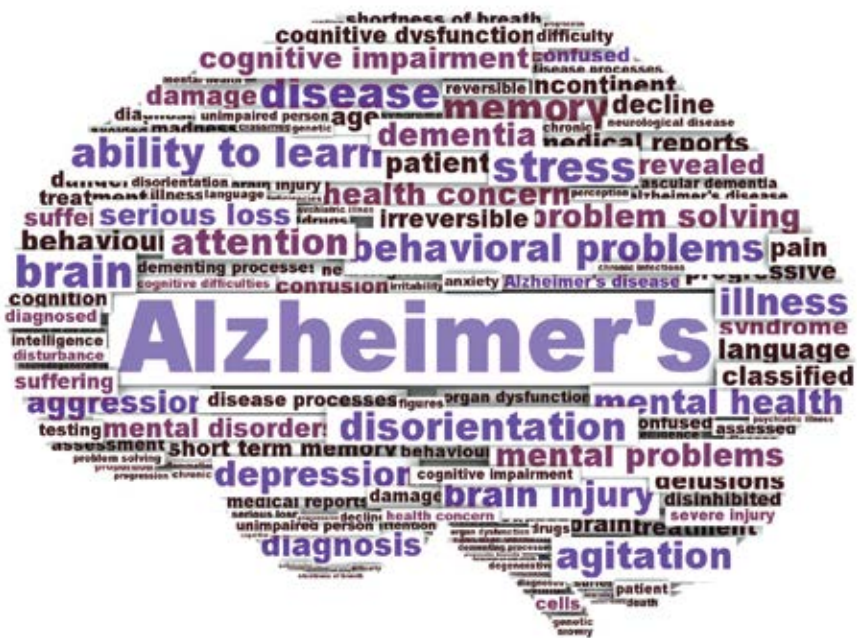
Epilepsy can occur as the result of genetic influence, head trauma, brain conditions (like tumors or strokes), infectious diseases, prenatal injury, or developmental disorders. However, there is no identifiable cause for half of those who suffer from the condition.

Because chronic, uncontrolled seizures may cause brain damage, it is important for people who have had seizures to seek treatment as soon as possible.

Parkinson’s Disease

In the 1990s, Michael J. Fox was at the top of his game. The star of *Family Ties* and the *Back to the Future* franchise had a solid career behind him, a gorgeous family, and a role on the ABC series, *Spin City*. But behind the scenes, Fox was fighting a great health battle at the age of only 30.

An uncontrollable twitch in Fox’s finger had unveiled the early onset of Parkinson’s disease, a neurological condition caused by the loss of dopamine-producing brain cells. Known for causing



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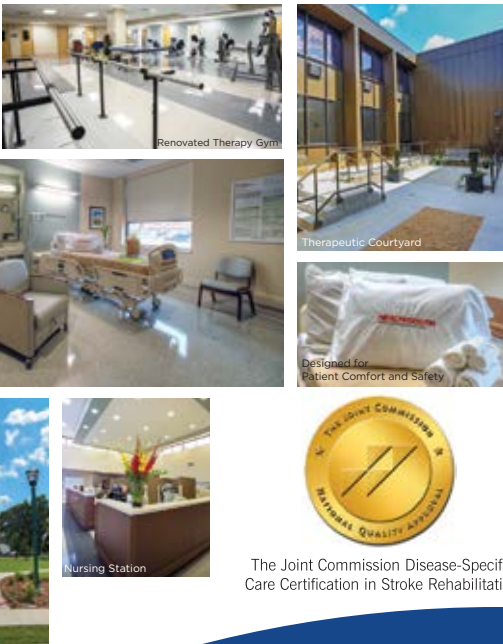
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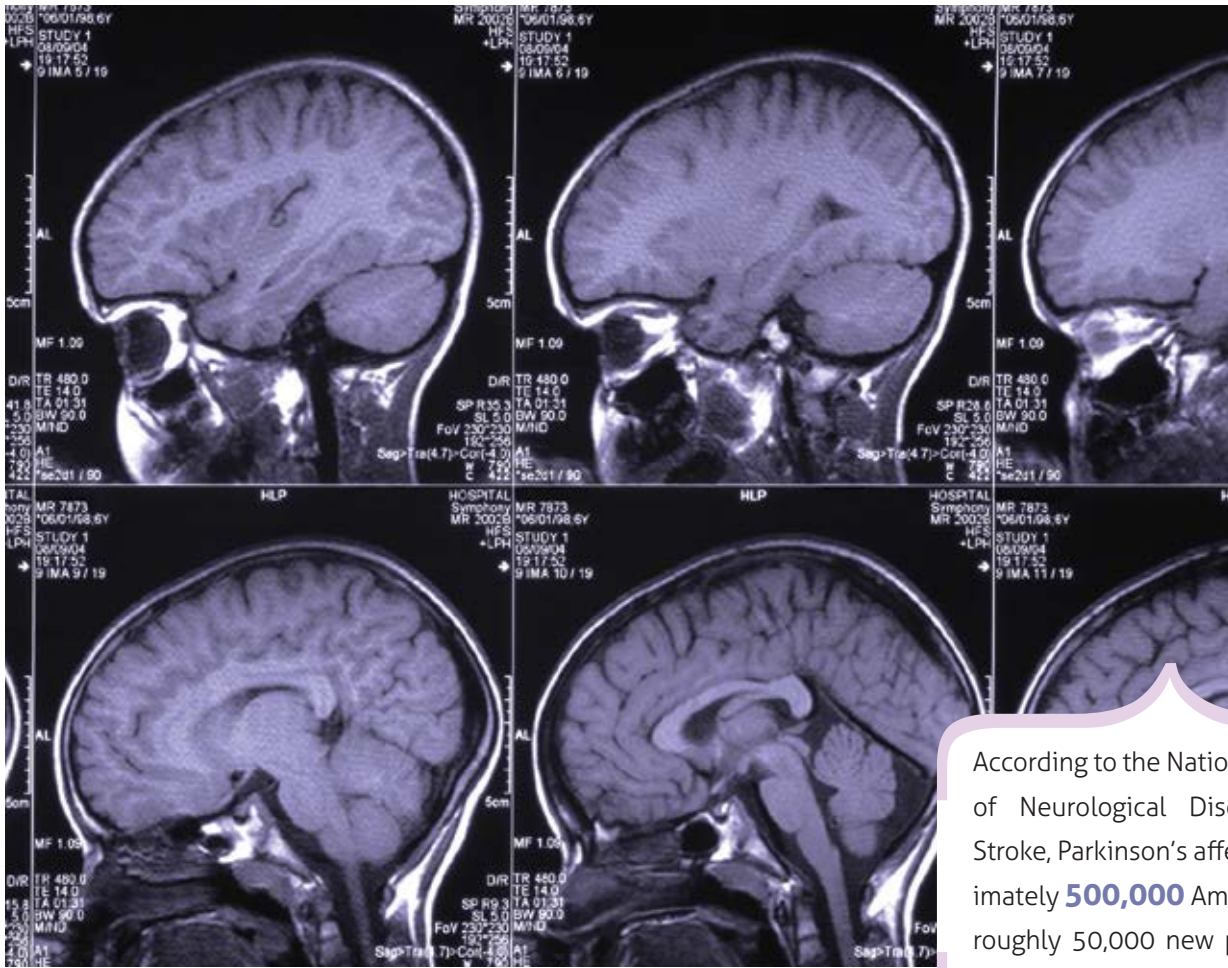


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According to the National Institute of Neurological Disorders and Stroke, Parkinson's affects approximately **500,000** Americans, and roughly 50,000 new patients are diagnosed every year.

tremors, stiffness, limited movement, balance issues, and difficulty with swallowing and speaking, the disease is most common in men age 60 and older. But 5 to 10% of cases begin earlier in life, striking people as young as 40, or in Fox's case, even younger.

According to the National Institute of Neurological Disorders and Stroke, Parkinson's affects approximately 500,000 Americans, and roughly 50,000 new patients are diagnosed every year.

Researchers are still working to determine what causes Parkinson's, studying factors such as heredity and environmental conditions.

Multiple Sclerosis

Perhaps one of the most difficult diseases to diagnose, multiple sclerosis (MS) can

impact patients in ways that may seem unrelated to the untrained eye. The condition can cause a variety of symptoms including blindness, chronic pain, uncontrollable itching, and even paralysis.

MS is an autoimmune disorder of the central nervous system (CNS), which is composed of the brain, spinal cord, and optic nerves. The disease occurs when the body's immune system attacks the protective myelin sheath that surrounds the nerves. When this protective coating is damaged, the brain, spinal cord, and other areas of the body have difficulty communicating, and the exposed nerves themselves may deteriorate.

According to the National Multiple Sclerosis Society, 2.3 million people in the world have MS, and women are impacted more often than men. The cause of the dis-

ease is still unknown and there is no cure yet. But there are many disease-modifying drugs that may be injected, given intravenously, or even taken orally to slow the progression of MS, offering hope to those who are waiting for a cure.

Diagnosing Disorders of the Nervous System

With the advances of modern medicine, doctors can more easily determine the presence of a neurological disorder. Diagnostic imaging such as computerized tomography (CAT) scans and magnetic resonance imaging (MRI) are among the most critical components in finding neurological disease.

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Dennis, a Certified Public Accountant, serves as the managing partner of the Chattanooga office of LBMC. In this role he has the opportunity to interact with many of the City's leaders in a variety of business and philanthropic activities. Dennis has diversified experience with a variety of industries, especially accounting and tax matters relating to the manufacturing, distribution and services industries. A native of Nashville, Dennis resides in Chattanooga with his wife and three children where he spends his free time hiking, biking and enjoying Chattanooga.

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Other diagnostic tests include:

- *electroencephalogram* (EEG) that records the brain’s continuous electrical activity by means of electrodes attached to the scalp
- *cerebral angiography* to detect narrowing or obstruction of arteries and blood vessels
- *lumbar punctures* or spinal taps to diagnose infections of the brain or spinal cord and identify autoimmune disease such as multiple sclerosis
- *nerve conduction studies* to determine whether a nerve is functioning normally

Disease Prevention and Treatment


Because the cause of most neurological disorders is unknown, preventing occurrence can be difficult if not impossible. However, there are steps you can take to mitigate the severity of a neurological condition.

- *Alzheimer’s* – Maintaining a healthy weight, lowering blood pressure and cholesterol levels, and exercising your brain and body can help slow disease progression.
- *Epilepsy* – Anti-seizure medications and certain surgeries can treat or even stop the occurrence of seizures. Avoiding stress and alcohol can also help.
- *Migraines* – Preventative medications, regular exercise, avoidance of stress, and consumption of frequent meals can minimize the occurrence of these headaches.
- *Multiple Sclerosis* – Steroids can reduce the severity of MS attacks. Injectable and oral medications may also be taken to suppress an overactive immune system and oral antidepressants can help cope with depression.

Healthy habits such as rest, nutrition, and exercise can help fight fatigue.

- *Parkinson’s* – A diet rich in fruits, vegetables, fiber, fish, and other omega-3 oils may reduce the risk of developing Parkinson’s. Once the disease is present, patients may take medications to reduce symptoms and engage in a variety of therapies to slow disease progression. Deep brain stimulation is also known to deactivate the sections of the brain that cause the disease.

Get Support Today

While the diagnosis of a neurological disease can be devastating, it is not what it was 25 years ago. Modern treatments can help you manage your condition, and support groups are a great way for you and your family to connect with people who understand your disease and can offer advice. 

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