



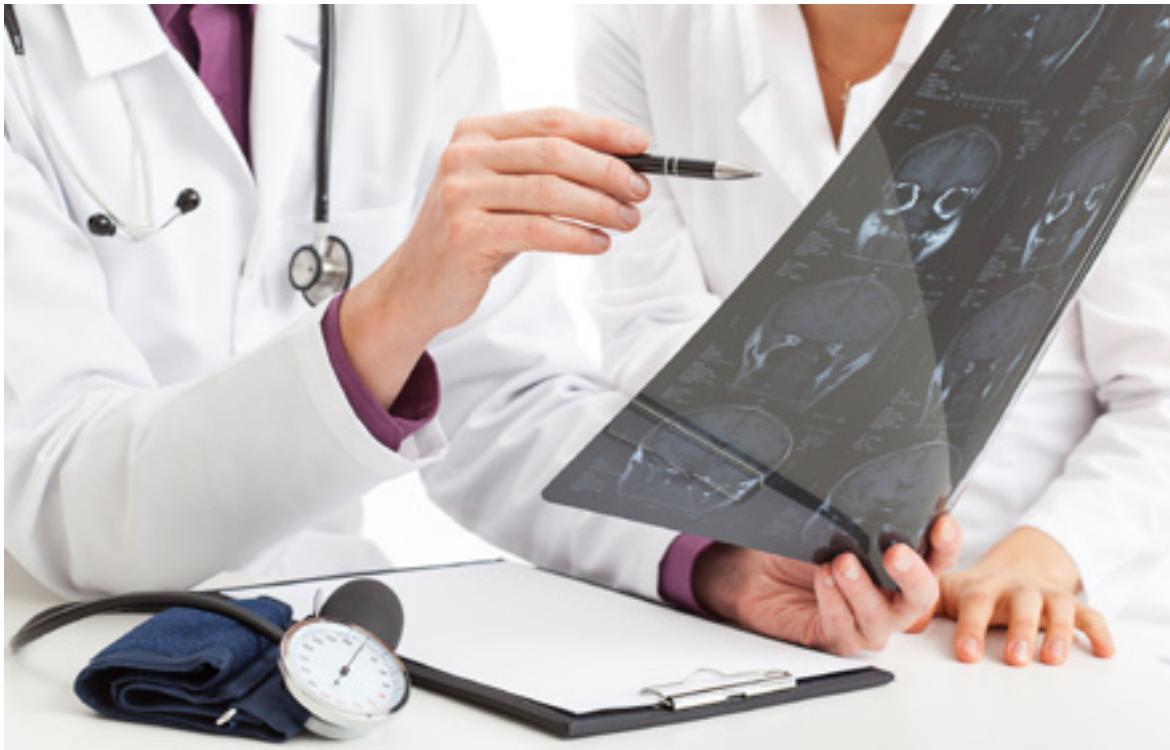
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When Do I Need
To See A Neurologist

When Do I Need To See A Neurologist

The human body is a complex, sophisticated machine, both adaptable and vulnerable to its environment. Your primary care physician is your first line of defense when it comes to your health, assuming the role of diagnostician, immunizer, counselor, and providing preventive care and chronic illness management.

Since the human body consists of many different systems, 206 bones, 200 types of cells and is prone to a number of possible conditions and diseases, it's easy to see why specialized medicine exists. Neurology is one such specialty, and the aim of this guide is to help the patient determine when a visit to a neurologist is necessary by identifying those symptoms associated with various neurological disorders.



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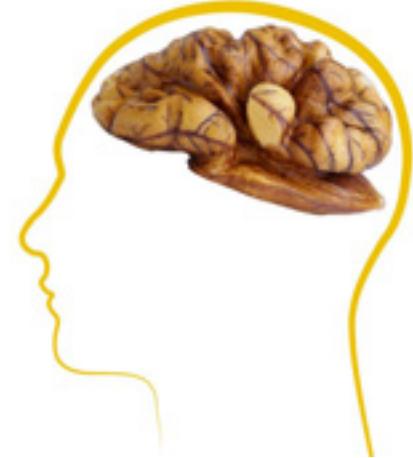
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Introduction to Neurology

What is a Neurologist?

This type of physician is trained to care for all aspects of a patient's health in relation to diseases or disorders of the nervous system, with the exception of surgery.

On average they will have completed 12 or more years of formal education and training. Many will continue to further their education and focus on a subspecialty such as pediatric neurology, sleep or pain medicine.



The Nervous System

This complex network is responsible for communicating with and controlling your entire body as well as sending and receiving messages that regulate thought and movement with two major divisions:

- The central nervous system involving the brain and spinal cord
- The peripheral nervous system comprised of cranial and spinal nerves

The cells that make up both systems are called **Neurons**, which transmit information chemically and electrically throughout the body. As the body's central command unit, the **Brain** is made up of billions of neurons which fire any time you think or respond to a stimulus. There are three fundamental parts to the brain:

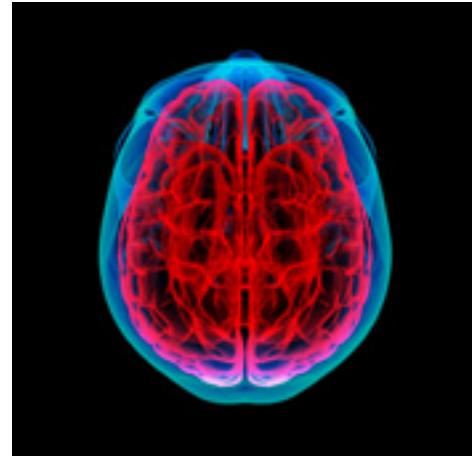
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- **Cerebrum**

Where thinking occurs and the area that controls all senses and voluntary movements



- **Cerebellum**

Responsible for balance and coordination

- **Brain stem**

The vital link to the spinal cord, also controlling breathing, digestion, and heartbeat

The Spinal Cord

The spinal cord is a tubular bundle of nerve fibers, that runs down the center of the back and is protected in part by spinal fluid and hard vertebrae. The nerves located within branch off to exit at various levels, carrying information from the spinal cord throughout the body and information gathered from the body back up to the brain. These levels include:

- **Cervical nerves**

Located in the neck area, these nerves control breathing, and supply feeling and movement to the arms, upper trunk, and neck

- **Thoracic nerves**

Nerves in this area of the upper back branch out to the abdomen and trunk

- **Lumbar and sacral nerves**

Nerves which supply the bladder, bowels, legs and sexual organs are located in these areas of the lower back



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What to Expect During Your Visit

What is a Neurologist?

Your type of insurance will determine whether or not you require a referral from your primary physician, and the length and scope of the visit will depend on your chief medical complaint and medical history.

After the initial consultation, the neurologist will begin the physical diagnostic exam, the specifics of which are reliant upon the nature of the symptoms and may include:

- Testing of the reflexes
- Checking your locomotive capabilities
- Testing coordination and balance
- Vision or sensory awareness testing

At the conclusion of the visit, the doctor may:

- Order further diagnostic or lab testing
- Prescribe or provide sample medications
- Schedule a follow-up visit

Finding a Neurologist in Your Area

There are more than 16,000 neurologists currently practicing in the United States and the easiest way to locate one in your area is to visit the American Academy of Neurology website and search their extensive database.

Common Types of Neurological Disorders

There are over 600 different types of neurological disorders, most of which are virtually unheard of outside of a doctor's office. Millions of people across the globe are affected by them, each requiring some form of treatment; here are some of the more common types:

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Dementia (Memory Problems)

is a general term that describes problems with memory and mental function. Memory problems tend to be associated with normal aging, but dementia is not. Dementia begins gradually in most cases and worsens over time. It severely disrupts one's quality of life. Symptoms of dementia include:

- Memory Loss
- Inappropriate behavior
- Hallucinations
- Impaired judgment
- Difficulty thinking
- Impaired motor functions

The following are progressive dementias which worsen over time:

- Alzheimer's Disease
- Lewy Body Dementia
- Vascular Dementia
- Frontotemporal Dementia

As there is no cure, dementia can only be managed in the following ways:

- Occupational therapy
- Medication
- Cholinesterase inhibitors



If you or a loved one is experiencing any of these symptoms, see a neurologist to rule out any other possible causes. Several treatable conditions may cause dementia-like symptoms and it is important to rule those out before making a proper diagnosis.

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Alzheimer's Disease

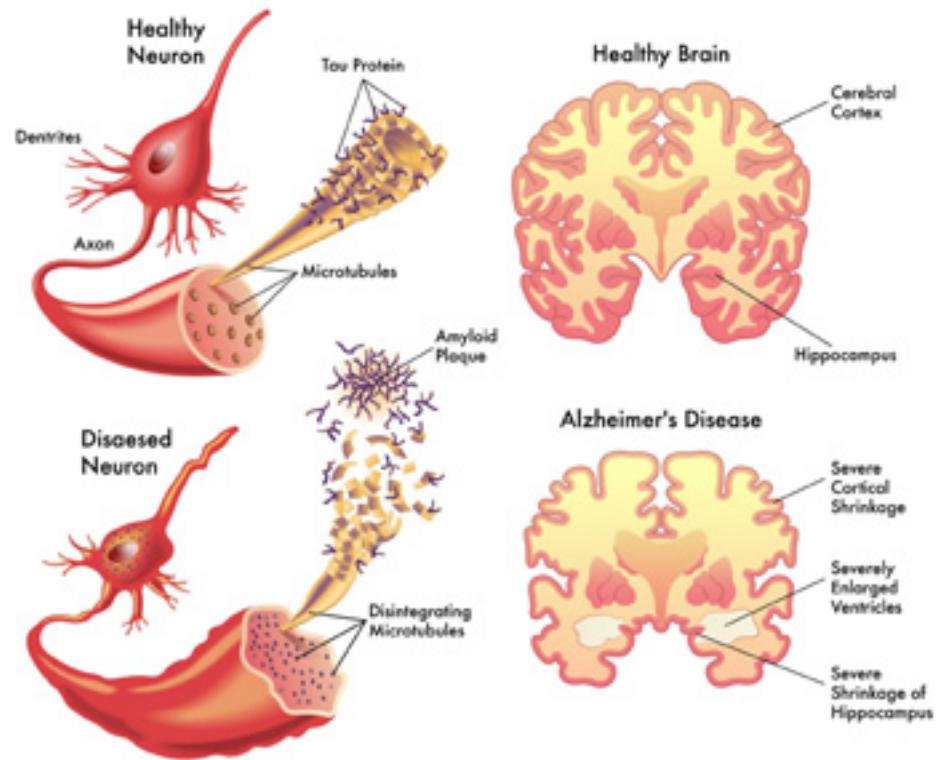
This fatal, degenerative, and progressive disease is a form of dementia – a broad term used to explain memory loss and other symptoms that interfere with daily life.

Possible Causes

Definitive causes for Alzheimer's are currently unknown but there are several risk factors linked to this disease:

- **Age**

Increased age is number one; the majority of Alzheimer patients are 65 or older, though symptoms can begin as early as 30 as in the case of the early-onset form of the disease



- **Genetics**

Certain genes do tend to increase a person's risk of acquiring Alzheimer's, though it's not a guarantee and genetic testing is rarely done

- **Ongoing research**

Additional risk factors being studied include alcohol and tobacco usage, diet and exercise, environmental factors, and preexisting conditions or diseases

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Symptoms

The progression of Alzheimer's disease begins slowly, evolving over time from mild to moderate and finally severe. Common symptoms and warning signs include:

- **Short term memory loss or mild confusion**
Memory loss can worsen as the patient forgets important dates and names, repeats the same statement or question over and over, misplaces objects by putting them in odd places, and eventually fails to recognize common objects and loved ones
- **Behavioral changes**
As changes occur in the brain, so can the actions and feelings of the patient, potentially resulting in:
 - *Aggressiveness*
 - *Changes in sleeping patterns*
 - *Delusions*
 - *Depression*
 - *Difficulty sleeping*
 - *Distrustfulness*
 - *Irritability*
 - *Mood swings*
 - *Social withdrawal*
- **Problems with written and verbal communication**
The patient may have difficulty finding the words to effectively communicate and eventually lose the ability to read or write.
- **Disorientation**
As the disease progresses, it may become more difficult to recognize once familiar surroundings or to know the date, day, or season.

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Diagnosis/Treatment

Since there is no single definitive test for Alzheimer's, diagnosis requires a careful and thorough medical evaluation. Part of the diagnostic criteria involves confirmation of memory loss with cognitive testing, and at least one or more of the following:

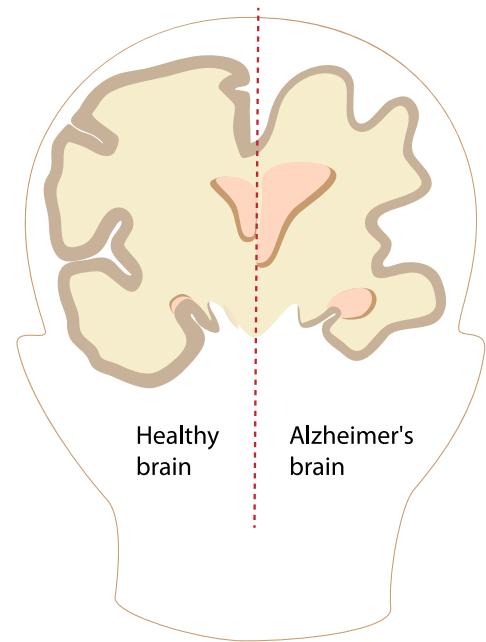
- Abnormal speech
- Impaired judgment, problem solving or planning
- Impaired performance of learned motor skills
- Failure to recognize familiar people or objects

Further examination and evaluation by a neurologist may include:



- A thorough review of the patient's medical history
- Neurological and physical examinations
- Blood and brain imaging testing to help rule out other conditions

There is currently no cure for this disease, but a neurologist may suggest or prescribe medicinal or non-medicinal treatments to help with behavioral and cognitive symptoms.



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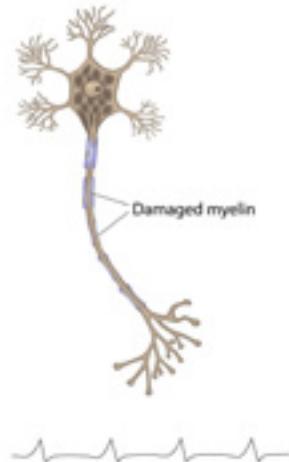


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Multiple Sclerosis

Multiple sclerosis, or MS, is a chronic disease that attacks the central nervous system (CNS) and more specifically, myelin – the protective coating surrounding the nerve fibers in the CNS. As the myelin is damaged it forms scar tissue, or sclerosis, which gives this disease its name. When these fibers become damaged or destroyed, communication between the brain and the spinal cord becomes garbled, producing a multitude of symptoms.

Multiple Sclerosis



Possible Causes

As with many neurological disorders the cause of MS is currently unknown though theories exist involving:

- **Immunity**

Myelin damage is thought to be due to an unnatural response by the body's immune system in which it attacks the myelin, though what triggers the attack is unknown

- **Genetics**

MS is not inherited in the traditional sense, but researchers have managed to identify specific genes that put certain people at a higher risk for MS

- **Environmental Triggers**

There is a greater occurrence of MS in areas farther from the equator. Possible theories surrounding this phenomenon are vitamin D levels from exposure to sunlight and exposure to certain environmental agents prior to puberty

- **Viruses**

While there is no definitive link between a particular virus and MS, the Epstein-Barr virus is considered a possibility

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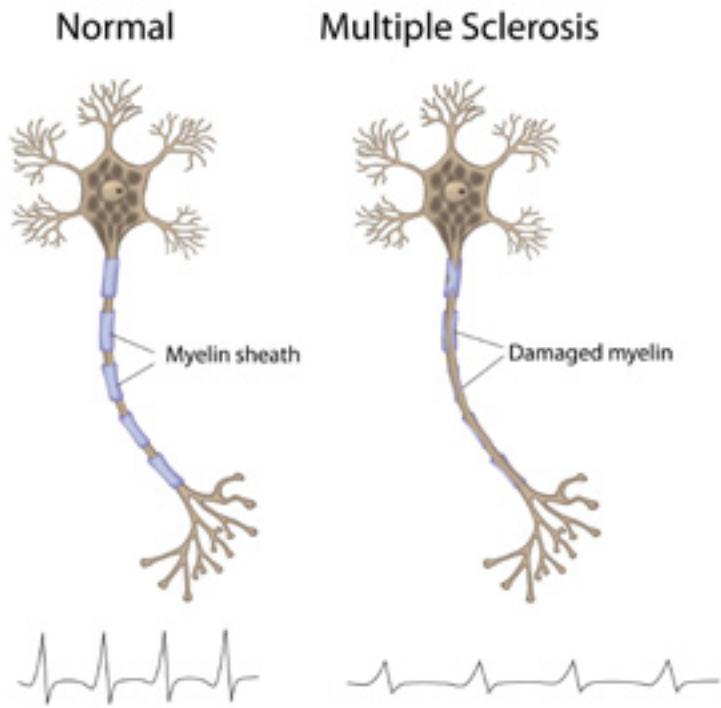


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Symptoms

MS symptoms and their progression are unpredictable and vary from patient to patient, most commonly including:

- Balance/coordination issues
- Bladder or bowel dysfunction
- Cognitive issues
- Depression
- Dizziness or vertigo
- Emotional issues
- Fatigue
- Muscle spasms, pain or stiffness
- Numbness
- Pain
- Sexual dysfunction
- Trouble walking
- Vision problems



Diagnosis/Treatment

There is no cure for MS, but there are a number of effective treatments your neurologist may prescribe to slow its progression, manage symptoms, improve function and quality of life, and treat flare-ups. Treatment plans are tailored to each individual's needs and may include:

- A variety of medications, steroid and non-steroidal
- Diet modifications
- Exercise
- Physical therapy

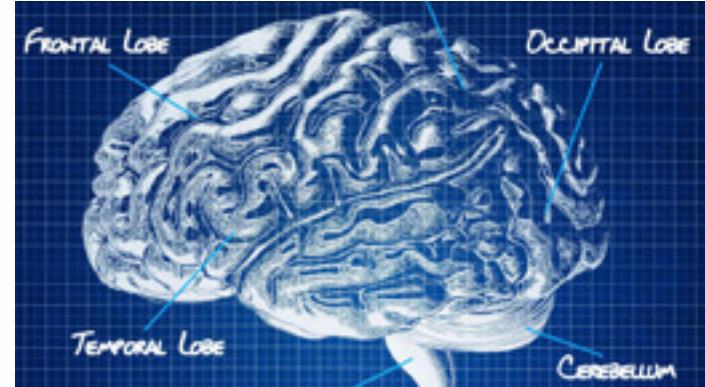
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Epilepsy

Epilepsy is a medical condition affecting the nervous system, which causes the patient to have unprovoked seizures. Also referred to as a "seizure disorder", epilepsy is categorized by type, often called epilepsy syndromes, defined by:

- Age on onset of seizures
- Family history
- Electroencephalogram (EEG) results
- Medical imagery results
- Type of seizure
- Prognosis



Seizures occur when a group of brain cells which normally communicate with each other through small electrical spurts of activity, have a sudden, irregular burst, which can cause confusion, convulsions and loss of awareness.

Possible Causes

In the majority of cases (60 to 75 percent) the cause of this condition is unknown but for those that are, causes include:

- Alcohol or drug abuse
- Brain trauma
- Brain tumor
- Developmental disorder
- Injury or lack of oxygen at birth
- Degenerative disorder, such as Alzheimer's disease
- Genetics
- Infection
- Stroke

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Symptoms

A person who has had two or more seizures is defined as having epilepsy. Symptoms can vary from person to person but all have a:

- **Beginning**

Some patients may experience an “aura” or warning signal prior to the seizure while others may have none. A seizure that does not continue past the warning stage is called a partial seizure

- **Middle**

If the patient began the seizure with an aura, it may continue as such or it may evolve into a complex partial seizure or convulsion. For those patients that received no warning a complex partial seizure or convulsion may occur

- **End**

This is the journey back to the brain's normal state and may take anywhere from seconds to hours

Early warning symptoms of a seizure may include:

- A sense of déjà vu
- Odd feelings
- Particular sights or sounds
- Panic or fear
- A pleasant feeling
- Nausea
- Numbness
- Dizziness
- Lightheadedness
- Headache



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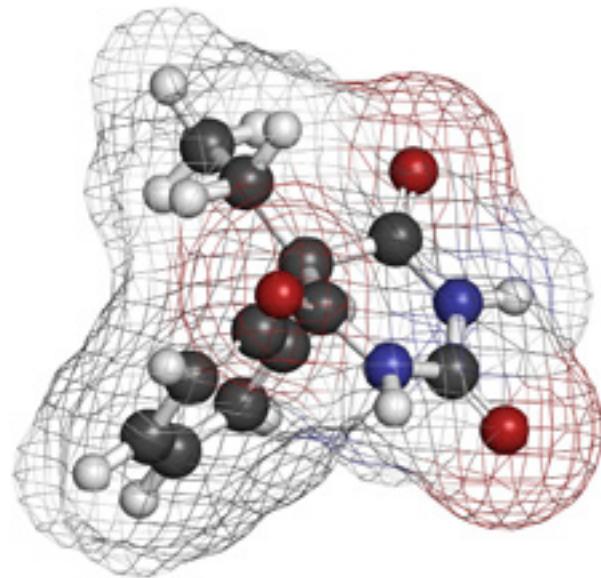
During the seizure the patient may experience any of the following:

- Blackout
- Confusion
- Deafness
- Loss of consciousness
- Fear or panic
- Convulsions
- Drooling
- Eyes rolling up
- Incontinence
- Teeth clenching
- Racing heart



After the seizure the patient may experience:

- Memory loss
- Confusion
- Difficulty writing
- Depression
- Embarrassment
- Difficulty talking
- Exhaustion
- Headache
- Nausea
- Thirst



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Diagnosis/Treatment

Anyone that has experienced a seizure or periods of time where they have blacked out should seek medical attention. The attending physician will need to determine if a seizure has occurred and if no other underlying medical condition is found to be the cause, the patient will be referred to a neurologist for further testing. The decision to treat this condition is an individual one with many factors to consider including:

- Age of the patient
- EEG results
- Number and severity of seizures
- Side effects of medication

A neurologist will weigh benefits of treatment against the risks before prescribing antiepileptic medication.

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Other Common Neurological Disorders



Cerebral Palsy

Cerebral Palsy (CP) is an incurable movement disorder, caused by damage to the brain before, during, or immediately following birth. It is non-progressive and will not result in further degeneration.

Identifying CP

The most common indicator of CP is a delay in development, though doctors may suspect this condition early on if there were indicators before birth or if delivery was especially traumatic. Eight signs a pediatric neurologist may use to diagnose CP include:

- Balance
- Coordination
- Fine motor skills
- Gross motor skills
- Muscle tone
- Oral motor dysfunction – difficulty using the jaw, lips or tongue
- Posture
- Reflexes



Treating CP

Treatment is decided on a case by case basis as various levels of impairment may be present, and may include:

- Drug therapy
- Physical therapy
- Surgery

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Parkinson's Disease

Parkinson's disease (PD) is a chronic, degenerative, and progressive movement disorder, involving the malfunction and death of neurons in the brain. Many of these neurons are responsible for producing dopamine, a chemical messenger that aids in the transmission of signals between the brain and the body, controlling coordination and movement. As the disease progresses, less dopamine is produced and the patient is robbed of the ability to control movement in a normal way.

Diagnosing PD

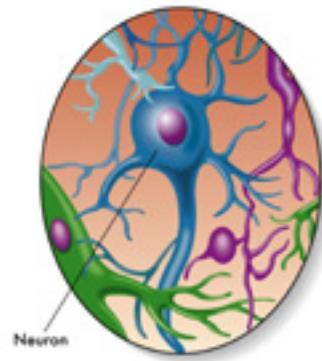
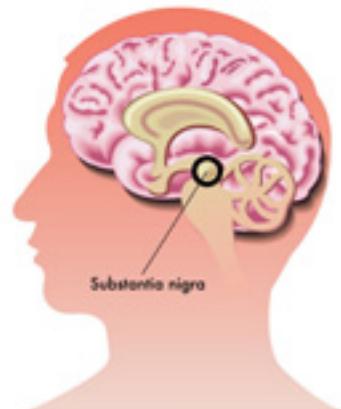
Early diagnosis of PD is difficult and there are no standard diagnostic tests available at this time. Most patients rely on a neurologist for the assessment and treatment of this disease as they have the necessary experience and training. The neurologist will look for:

- Stiffness of the limbs or neck
- The ability to easily rise from a chair
- A normal gait with a symmetrical arm swing
- An animated expression
- Recovery time to regain balance
- Tremors of the arms whether at rest or extended

Treatment

There is no cure for this disease though, there are a variety of medications designed to manage symptoms. Surgical treatment involving deep brain stimulation has proven successful for some patients to relieve certain symptoms though it does come with risks.

Parkinson's Disease



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Scoliosis

Scoliosis is a condition of the spine which causes it to curve abnormally, side-to-side. The degree ranges from moderate to severe and any area of the spine may be affected, though most common are the thoracic (chest) and lumbar (lower back) regions. The typical age of onset is between 10 and 15 years of age.

Causes

As with many neurological disorders the cause of MS is currently unknown though theories 5 exist involving:

- **Congenital**
The condition is present at birth and may be detected at an earlier age
- **Idiopathic**
Approximately 80 percent of scoliosis cases are idiopathic, meaning there is no known cause
- **Neuromuscular**
This type of scoliosis is associated with an underlying neurological or muscular condition such as CP, muscular dystrophy, spina bifida or spinal cord trauma

Diagnosis/Treatment

Certain physical characteristics are indicative of this condition including:

- A body which leans to one side
- Rib cages are at varying heights
- Uneven shoulders
- Uneven waist

If scoliosis is suspected, medical imaging is used to confirm the diagnosis. Treatment is determined based on a number of criteria and may include:

- Bracing
- Observation
- Surgery



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Headaches

Different Types of Headaches

Cognitive Symptoms

- Migraines

Pulsating or throbbing pain generally localized to one side of the head (unilateral), difficulty performing daily activities, sensitivity to light and sound, nausea with or without vomiting. Usually begins with aura – flashing lights, zigzag patterns, or vision changes



- *16% of people complain of migraines*
- *6% of men and 18% of women suffer from migraines*
- *60% of migraines are unilateral*
- *20% experience an aura up to an hour before a migraine*

- Tension

Squeezing pain, usually on both sides of head, forehead, temples, or neck; rarely accompanied with nausea, vomiting, and light and sound sensitivity. Pain appears gradually and without warning

- *Most common headache; affecting up to 90% of the population*
- *69% of males and 88% of females experience tension headaches*

- Cluster

Severe pain that appears suddenly and is on and off throughout the course of a few weeks; generally localized behind one eye

- *69 in 100,000 people are affected*
- *Rarest, but most severe type of headache*

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- Sinus

Caused by sinusitis with symptoms similar to migraines; however, no nausea or vomiting nor sensitivity to light and sound

- *69 in 100,000 people are affected*
- *Rarest, but most severe type of headache*

Headache treatments vary widely:

- Rest is the most effective
- Drinking green tea
- Botox injections
- Surgery
- Prescribed pain medications

You should see a neurologist if your headache is associated with or accompanied by any of the following:



- Pain lasting over 24 hours with no prior history of headaches
- Pain occurring after recent head trauma
- Numbness or tingling in arms and/or legs
- No improvement with natural remedies
- Fever over 100.5 F
- Headache lasting more than 10 days

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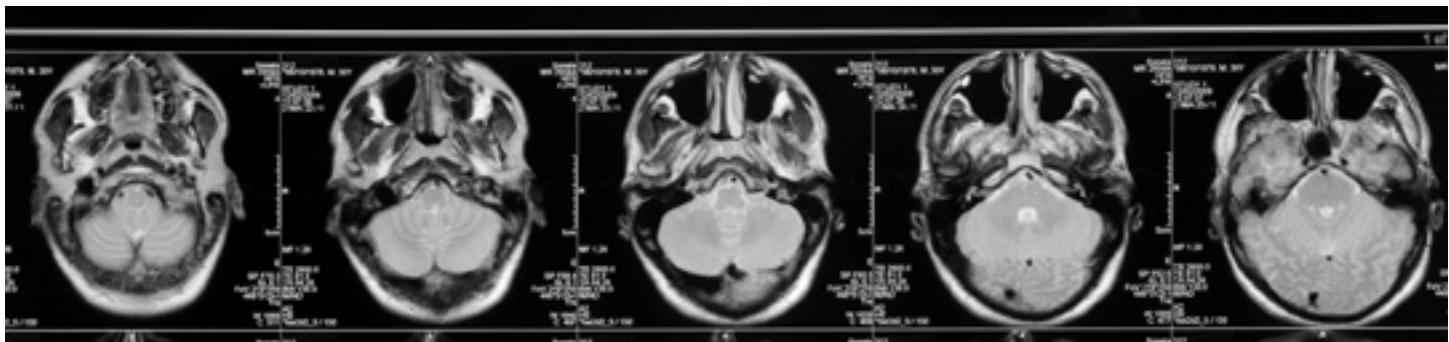
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If you experience a very severe headache with vomiting and light sensitivity, see a neurologist immediately as it may be a sign of an underlying condition. Headaches accompanied with speech problems may also require immediate attention to rule out or diagnose serious conditions.

Even though headaches are very common, they may still require you to visit a neurologist to help identify their causes. As a rule of thumb, regardless of the existence of the aforementioned symptoms, you should see a neurologist if your headaches get worse over time rather than better.

Things you should ask your neurologist:

- Is my headache dangerous?
- What tests do I need?
- What type of headache am I having?
- What are the side effects of my medications?
- Will I have to make any lifestyle changes?



Your neurologist will examine your medical and family history, perform a physical and neurological exam, and from there determine what, if any, further testing is required, such as laboratory or medical imaging; treatment is dependent on the findings.

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Dizziness or Balance Issues

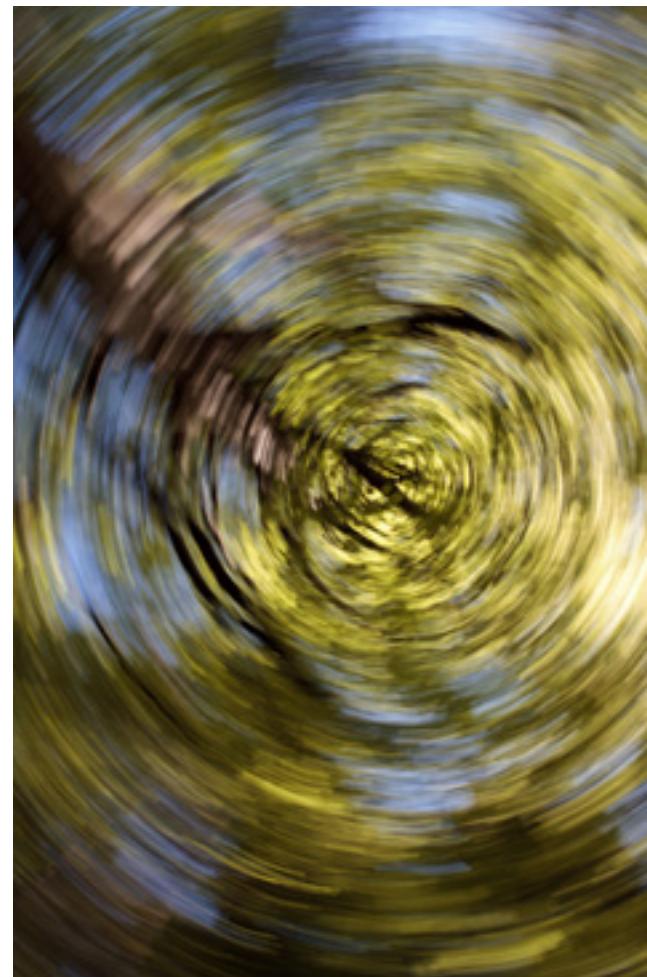
Dizziness has several causes, but the main reason people see neurologists for dizziness is due to vertigo. Vertigo is a fluid imbalance in the ears, causing you to feel an "everything is spinning" sensation. Vertigo has several causes:

- Infections of the inner ear (labyrinthitis)
- Meniere's disease - caused by infection or head injury; may include loss of hearing as well as ringing in ears (tinnitus)
- Drugs and alcohol
- Trauma
- Shortness of breath
- Stroke
- Low blood sugar

Dizziness accompanied by the following may warrant a visit to your neurologist:

- Double vision
- Nausea or vomiting
- Trouble using your arms or legs

If the patient is diagnosed with vertigo, treatment can range from one of several maneuvers designed to "reset" the crystals in the inner ear associated with balance, though medications may also be effective.



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Head and/or Neck Pain

Pain in these areas accompanied by the following, require attention:

- Accompanied by weakness or numbness
- Chronic or long lasting
- Does not respond to conventional treatment

The pain is diagnosed through physical exams and medical imagery, and treatment can involve a combination of rest, exercise, medication, therapy, and in extreme cases, surgery.



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Back Pain

Back pain can be frustrating and may have several causes. The most common causes include **Herniated Discs** and injuries that lead to **Chronic Back Pain**.

Herniated discs

Occur when spinal discs are under stress. The disk's inner material may swell, pushing through its tough outer membrane. The entire disk can become distorted or bulge in spots. With an injury, the protrusions may end up pressing against surrounding nerves. If further activity or injury causes the membrane to rupture or tear, the disk material may further extrude, causing pressure on the spinal cord or the nerves. This may result in extreme pain. In the beginning, there may be spasms in the back or neck which will greatly limit your movement. If nerves are affected, you may develop pain that radiates into a leg or an arm.

Chronic Back Pain

Is a condition in which one experiences back pain for no apparent reason for over three months. This is generally due to nerves constantly sending pain signals to the brain. This may be managed with physical therapy as well as local anesthetics. This may be due to herniated discs, injuries, scoliosis, or several other conditions. A neurologist will be able to help determine the cause of your back pain and provide appropriate, necessary treatments.



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Myasthenia gravis

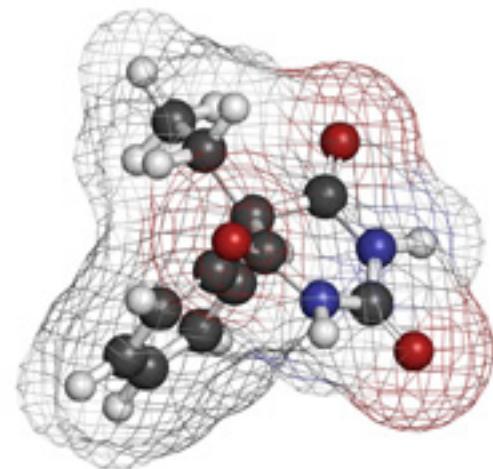
(MG) is an autoimmune disease which causes rapid fatigue of voluntary muscles – the ones controlling your eyes, face, neck, and limbs.

Symptoms include:

- Drooping eyelids
- Difficulty chewing and swallowing
- Weakness in arms, legs, and neck

While the symptoms are generally better with rest, you should see a neurologist if you have trouble with any of the following:

- Breathing
- Seeing
- Chewing and swallowing
- Walking
- Holding up your head
- Using your limbs



Myasthenia gravis

Myasthenia gravis affects both men and women – men over 60 and women under 40 are most susceptible to it.

- *About 20 in 100,000 people in the U.S. develop myasthenia gravis*
- *More men are affected than women*
- *Symptoms usually appear in women between ages 20 and 30, and in men after age 50*

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The cause is unknown and there is no cure, but there are several treatment options available to help you manage MG:

- Surgery – 15% of people were found to have tumors in their thymus glands, which, upon removal, improved MG symptoms
- Immunosuppressants
- Corticosteroids
- Plasmapheresis – in extreme cases, this intervention filters your blood of antibodies to lessen the effects of MG

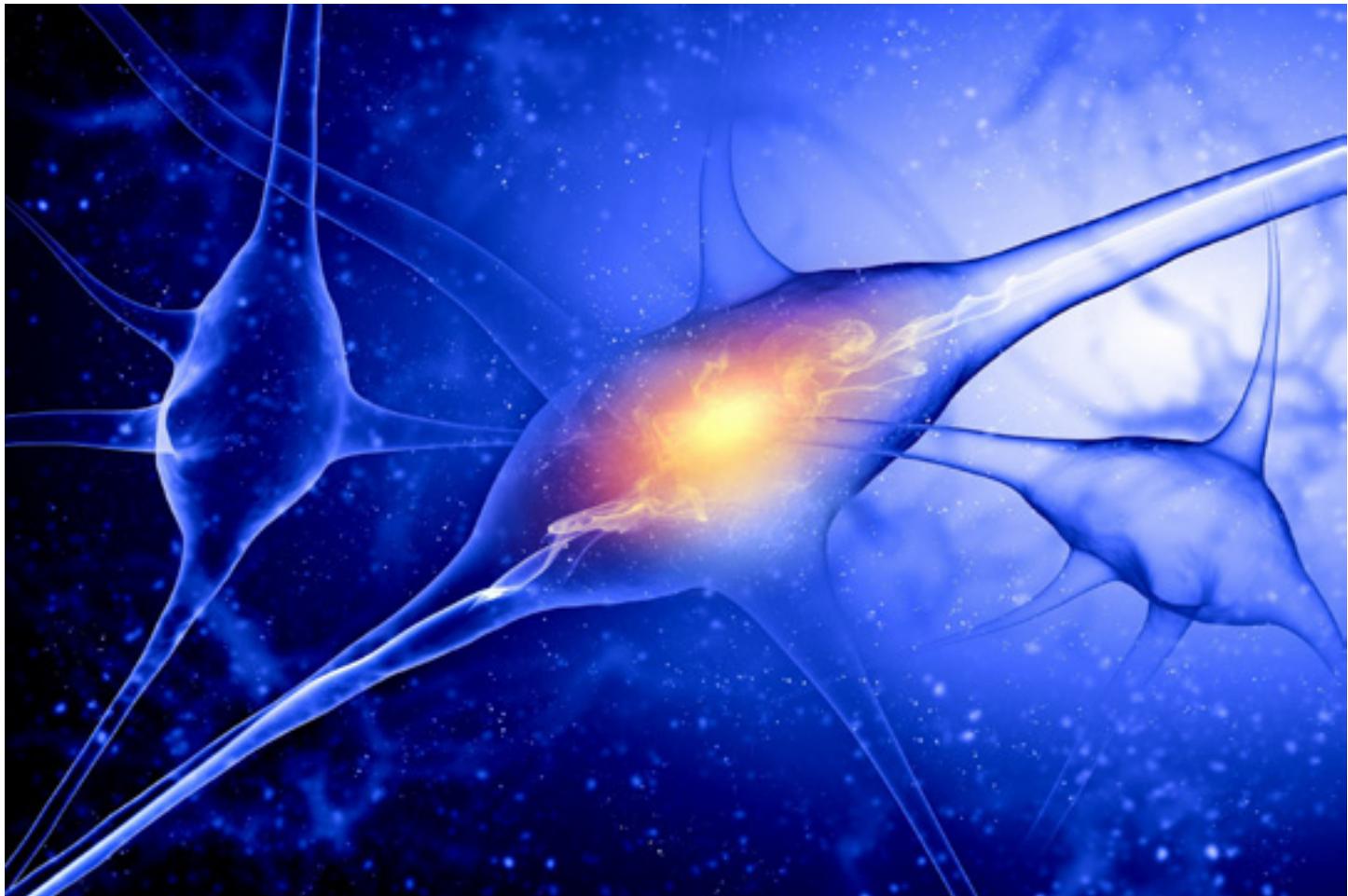


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Conclusion



Neurology plays a key role in understanding and treating a variety of disorders of the brain, spinal cord and nervous system. Common neurological disorders include: Alzheimer's disease, brain or spinal cord injuries, epilepsy, headaches, Parkinson's disease and strokes.

Your primary physician should refer you to a neurologist if they suspect your symptoms indicate a neurological disorder. You can find a neurologist in your area generally, or by sub-specialty, by visiting the [American Academy of Neurology](#) website.

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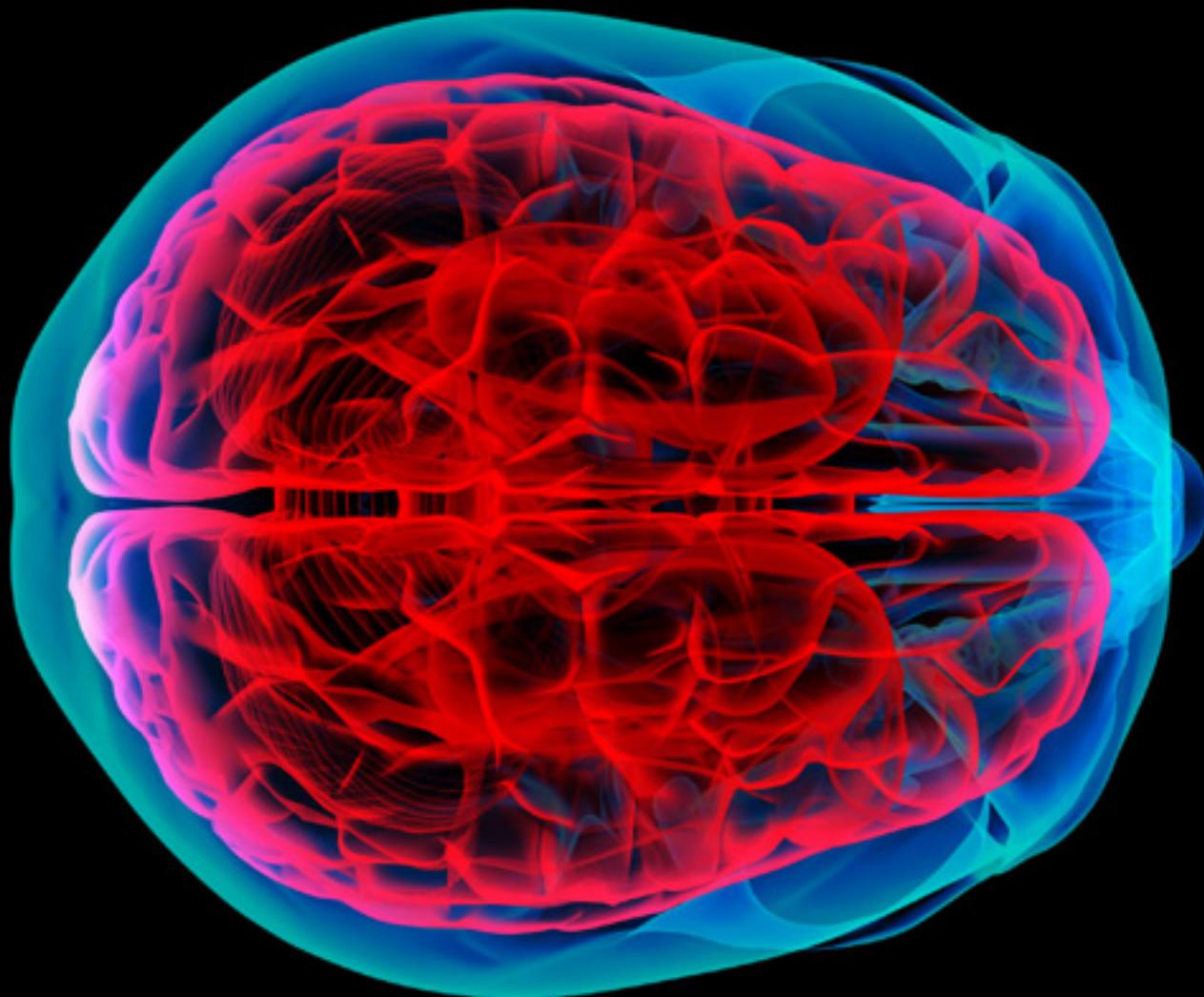
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