

Introduction

Your peripheral nerves are the nerves outside of your brain and spinal cord. Disorders that affect the peripheral nerves interrupt the messages between the brain and the rest of the body. There are more than 100 kinds of peripheral nerve disorders. They can affect one nerve or many nerves. Treatment aims to treat any underlying problem, reduce pain and control symptoms.

This reference summary explains peripheral nerve disorders. It covers common symptoms of these disorders, as well as treatment options.

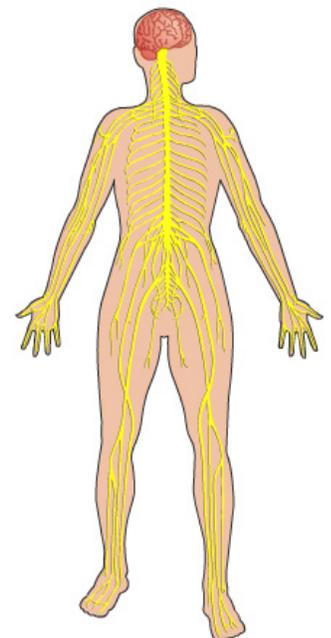
The Peripheral Nerves

Together, the brain and spinal cord are called the central nervous system. The nerves in the rest of the body make up the peripheral nervous system. The brain is the command center of the body. In addition to thinking and feeling, it receives information and sends orders to different parts of the body. Most of these orders travel from the brain through the spinal cord. From the spinal cord, orders travel to the rest of the body through peripheral nerves.

Healthy nerves send and receive messages about movement. They also send and receive messages about sensation, or feeling. If nerves become damaged, they cannot send and receive messages normally. This can cause movement and sensation problems. Nerve damage can happen anywhere in the body. Organs can also be affected by nerve problems.

Symptoms

Many peripheral nerve disorders have similar symptoms. The main symptoms are pain and numbness in the limbs.



Nervous System

Other common symptoms of peripheral nerve disorders are:

- Burning or tingling.
- Muscle weakness.
- Sensitivity to touch.

Some peripheral nerve disorders may also affect other parts of the body. This can cause symptoms such as:

- Diarrhea or constipation.
- Dizziness or fainting.
- Erectile dysfunction in men.

Erectile dysfunction is the inability to have an erection needed for sexual intercourse. It is also called impotence.

Other symptoms include:

- Indigestion, nausea or vomiting.
- Problems with urination.
- Vaginal dryness in women.



Symptoms often start gradually and then get worse. Talk to your health care provider if you notice any of these symptoms or other changes. Finding a problem early makes treatment easier in most cases.

Diabetic Nerve Problems

Diabetes can damage your nerves over time. Nerve damage caused by diabetes is called diabetic neuropathy. Damaged nerves may stop sending messages. They may also send messages slowly or at the wrong time.

Diabetic neuropathy is likely caused by a number of factors. Some examples are:

- High blood sugar levels.
- Abnormal blood fat levels.
- Low levels of insulin.



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Other factors that may lead to diabetic neuropathy are:

- Inflammation in the nerves.
- Inherited traits that increase your risk for nerve disease.
- Lifestyle choices, such as smoking or alcohol abuse.
- Physical injury to the nerves.

The risk of diabetic neuropathy increases the longer you have diabetes. It is more common in people who have had diabetes for 25 years or longer. There are different types of diabetic neuropathy. The most common type is peripheral neuropathy, which affects nerves in the arms and legs. The feet and legs are more likely to be affected before the hands and arms.

The first treatment for diabetic neuropathy is to make sure blood sugar levels are under control. This can help prevent further nerve damage. Blood sugar levels may be controlled with:

- Blood sugar monitoring.
- Meal planning.
- Physical activity.
- Diabetes medicines.
- Insulin.



Additional treatment depends on the type of nerve problem and symptoms. For example, medications can be used to control pain.

Guillain-Barré Syndrome

Guillain-Barré syndrome, or GBS, is a rare disorder. It causes your immune system to attack the peripheral nerves. Damage to these nerves makes it hard for them to send signals. Symptoms of GBS usually get worse over a period of weeks and then stabilize.

The first symptom of GBS is usually weakness or a tingling feeling in your legs that can spread to your upper body. In severe cases, GBS can cause paralysis, meaning you cannot move your body. Paralysis may cause breathing, blood pressure or heart rate problems. It is a medical emergency and can be life threatening.



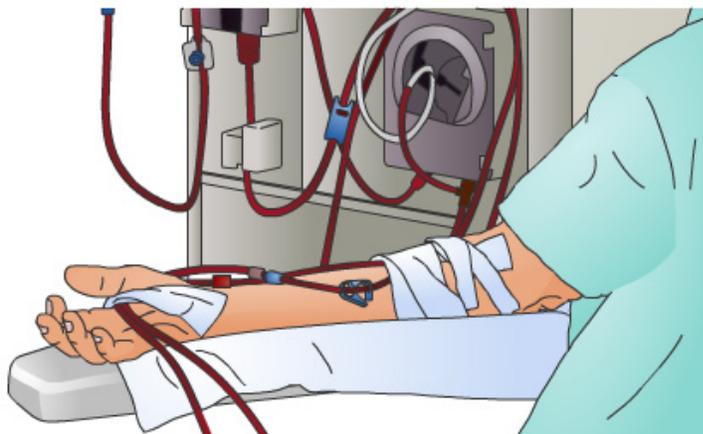
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The cause or causes of GBS are not known. It is known, though, that GBS is an autoimmune disease. An autoimmune disease is when the body's immune system begins to attack the body itself. In GBS, the immune system starts to destroy parts of the peripheral nerves. This interferes with the communication between the brain and the muscles of the body. GBS also causes the brain to receive fewer sensory signals from the rest of the body. This can affect the ability to feel textures, heat, pain and other sensations.

There is no known cure for GBS. Treatment can help improve symptoms. Recovery may take a few weeks to a few years.

Plasma exchange and high-dose immunoglobulin therapy are used to treat GBS.

Plasma is the liquid portion of the blood. In plasma exchange, blood is removed from the body and the plasma is separated. The blood cells are then returned without the plasma, which the body quickly replaces. In high-dose immunoglobulin therapy, health care providers give injections of certain proteins. These are proteins that the immune system naturally uses to attack invading organisms. This can lessen the immune attack on the nervous system.



Treatment for GBS often takes place in a health care facility. You may need to be placed on machines that assist and monitor body function.

Nerve Compression

Some peripheral nerve disorders may result from a nerve being compressed. Some of these disorders include:

- Carpal tunnel syndrome.
- Thoracic outlet syndrome.

Carpal tunnel syndrome is a common condition that causes pain and numbness in the hand. It happens when a major nerve called the median nerve is compressed. The median nerve passes through a narrow tunnel at the wrist.

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When the ligament in the carpal tunnel thickens, it puts pressure on the nerve. This causes numbness and possibly pain in the first 3 to 4 fingers of the hand.

Carpal tunnel syndrome may also be caused by:

- Diseases such as diabetes.
- Fractures in the wrist.
- Swelling of the tissues and bones surrounding the carpal tunnel.

Treatment for carpal tunnel syndrome may include:

- Avoiding repetitive movements.
- Bracing the wrist with a splint.
- Injection of steroids in the carpal tunnel.
- Surgery to release the ligament pressing on the nerve.



Thoracic outlet syndrome, or TOS, causes pain in the arm, shoulder and neck. It happens when the nerves or blood vessels just below your neck are compressed. The compression can happen between the muscles of your neck and shoulder or between the first rib and collarbone.

If a nerve is compressed, you may feel burning, tingling or numbness along your hand, arm and fingers. You may also feel weakness in your hand. If, along with the nerve, an artery or a vein is compressed, your hand might be sensitive to cold, or turn pale or bluish in color. Your arm might swell and tire easily.

There are many causes of TOS, such as:

- Injury.
- Tumors that press on nerves.
- Poor posture that causes nerve compression.
- Repetitive arm and shoulder movements and activity, such as from playing certain sports.

Treatment depends on what caused your TOS. Treatment begins with exercise programs and physical therapy to strengthen chest muscles, restore normal posture and relieve compression.



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Anti-inflammatory drugs may be prescribed for pain. Other medicines may also be given to break up and prevent blood clots. In some cases, surgery may be needed to release or remove the structures causing compression of the nerve or artery. Most people recover from TOS.

Nerve Injuries

Some peripheral nerve disorders may be caused by injuries to the nerves. Some of these disorders include:

- Complex regional pain syndrome.
- Brachial plexus injuries.

Complex regional pain syndrome, or CRPS, is a condition that causes intense pain. It usually affects the arms, hands, legs or feet.

Besides intense pain, symptoms in the affected area are:

- Decreased ability to move the affected body part.
- Dramatic changes in skin temperature, color or texture.
- Extreme skin sensitivity.



The cause of CRPS is unknown. It may happen after an injury, either to a nerve or to tissue in the affected area. There is no cure for CRPS. But early treatment can decrease symptoms. Treatment focuses on relieving the pain caused by CRPS. Treatment can include various medicines, physical therapy and nerve blocks. Often a combination of treatments is used. During a nerve block, an anesthetic is injected around the affected nerves. This helps relieve pain in some people.



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Brachial plexus injuries affect a network of nerves called the brachial plexus. This network conducts signals from the spine to the shoulder, arm and hand. Brachial plexus injuries are caused by damage to those nerves.

Symptoms may include:

- A limp or paralyzed arm.
- Lack of muscle control in the arm, hand or wrist.
- Lack of feeling or sensation in the arm or hand.



Brachial plexus injuries can happen as a result of shoulder trauma, tumors or inflammation. Sometimes they happen during childbirth when a baby's shoulders become stuck during delivery and the nerves stretch or tear. Some brachial plexus injuries may heal without treatment. Many children who are injured during birth improve or recover by 3 to 4 months of age. If treatment is needed, it can include physical therapy and, in some cases, surgery. Surgery is often needed when a nerve has been cut or torn.

Summary

Your peripheral nerves are the nerves outside of your brain and spinal cord. Disorders that affect the peripheral nerves distort or interrupt the messages between the brain and the rest of the body.

There are more than 100 kinds of peripheral nerve disorders. Some of these disorders include:

- Diabetic nerve problems.
- Guillain-Barré syndrome.
- Disorders caused by nerve compression.
- Disorders caused by nerve injuries.

Treatment aims to treat any underlying problem, reduce pain and control symptoms. Talk to your health care provider if you notice any symptoms of peripheral nerve disorders or other changes. Finding a problem early makes treatment easier in most cases.

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