

Guillain-Barré Syndrome

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Guillain-Barré syndrome is an autoimmune disorder that affects the peripheral nervous system. In contrast, multiple sclerosis is an autoimmune disease where the immune system attacks the central nervous system. The nerves of the nervous system have a myelin sheath that surrounds the axon. Axons are long extensions of nerve cells that transmit signals to other cells. When this sheath is destroyed or attacked by the immune system, these signals become weak or lost, resulting in an inability to feel textures, heat, pain, and other sensations. The immune system in our bodies is developed to recognize foreign material and act against it. In this syndrome, the immune system recognizes the myelin sheath as foreign and induces an immune response which includes the destruction of this sheath. There are no known reasons for why the immune system begins to destroy the myelin sheath.

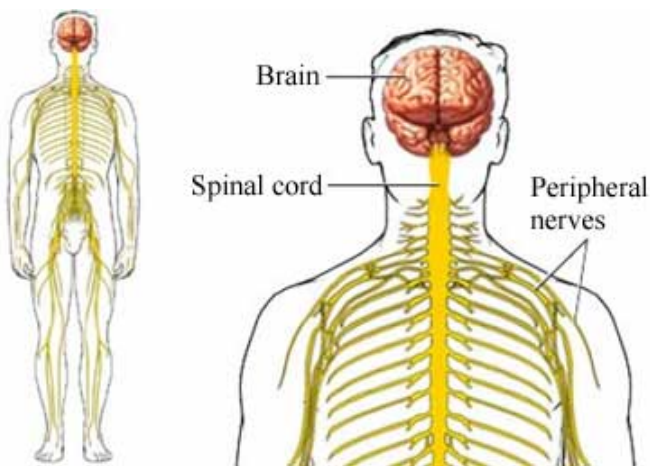
Typical first symptoms of Guillain-Barré syndrome include weakness or tingling sensations in the legs. The weakness then tends to affect the arms and upper body. The intensity of these symptoms can increase until the muscles are unable to function and the person becomes paralyzed. Some cases require medical attention due to the ability of the weakness spreading to muscles affecting breathing, blood pressure, and heart rate. The onset of this syndrome is often sudden and unexpected, diminishing most people's strength within the first two weeks. About 90 percent of all patients reach their greatest weakness by the third week.

Many people recover from this syndrome, but about 30 percent will still have residual weakness after three years. Currently there is no known cure for Guillain-Barré syndrome, however, treatments are used to lessen the severity of the symptoms and accelerate the recovery process. Some of the treatments include plasma exchange and high-dose immunoglobulin therapy. Keeping the body functioning properly during recovery is critical, not only manually moving the limbs to maintain flexibility and strength, but also being aware of any life-threatening factors such as being on a respirator or a heart monitor.

Guillain-Barré is considered a syndrome because there is no specific disease-causing agent involved. A syndrome is a collection of signs and symptoms, and may be hard to diagnose because of the variations of what the patients feel and what the doctors can observe. Doctors can examine whether or not the symptoms appear on both sides of the body, and whether reflexes are lost. A spinal tap can also help diagnose Guillain-Barré syndrome because the cerebrospinal fluid contains more protein than average.

Anybody can be affected by this disorder, both males and females equally. Guillain-Barré syndrome is rare, affecting only about 1 person in 100,000. This syndrome may be triggered by a respiratory or gastrointestinal viral infection, or may show up in a patient who underwent surgery or received vaccinations.

Scientists are continuing to do research on trying to understand how to prevent Guillain-Barré and better therapies. They are looking into how viral and bacterial infections may activate the immune system inappropriately, because they may contain similar peptides and proteins (recognized by the immune system) as the cells of the myelin sheath.



Expert on Guillain-Barré Syndrome?

DSES is always looking for volunteers to help teach or give presentations!!

Additional Resources:

National Institute of Neurological Disorders and Stroke; <http://www.ninds.nih.gov>

Image from <http://www.upmc.com/HealthAtoZ/Pages/HealthLibrary.aspx?chunkiid=22825>