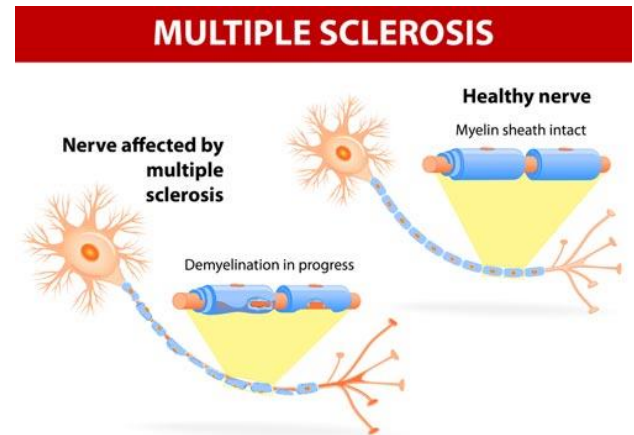


Neurological Disorders

Multiple Sclerosis

Multiple sclerosis is a progressive and unpredictable chronic disease of the nervous system. The disorder occurs when the protective sheath that covers nerve cells and aids conduction of nerve signals in the brain and nervous system becomes irreversibly damaged as the body incorrectly recognises the protective sheath on the nerve cells as a foreign body and mounts an immune response to it. This leads to the interruption of the messages travelling along the affected nerves.



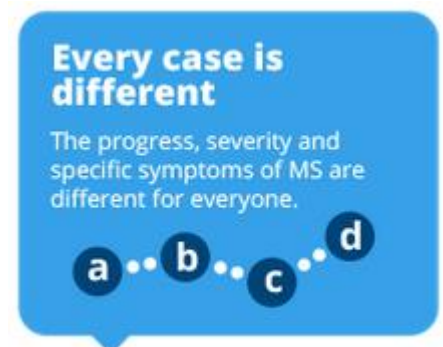
Causes

The exact cause of multiple sclerosis is not yet known. The condition affects around two and a half million people worldwide, 70% of sufferers are female, and there is an apparent genetic linkage with 10% to 20% of sufferers having a relative with the disease.

Multiple sclerosis is more prevalent in colder climates, therefore the further away from the equator a country is, the higher the incidence of multiple sclerosis.

Symptoms

Symptoms include visual disturbance and eye pain, limb and muscle weakness, muscle spasms, loss of sensation, fatigue and cognitive disturbances such as depression, attention deficit, impaired judgement and inability to control laughing and crying. The severity of multiple sclerosis can vary greatly. Some people have relatively mild symptoms whilst others are unfortunately completely incapacitated.



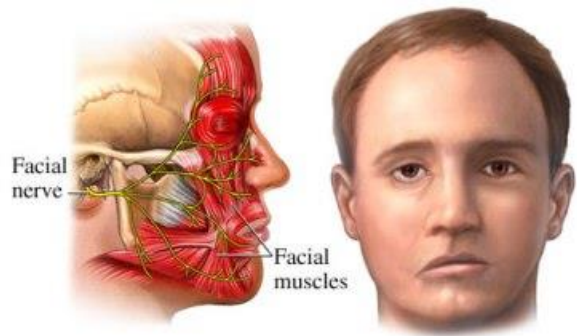
Diagnosis and treatment

Most of the symptoms of multiple sclerosis can also be caused by other conditions. Therefore, diagnosis is not straight forward, and there is no single test used to identify the condition. Instead, a combination of investigations are carried out such as Magnetic Resonance Imaging (MRI) Scans and testing of cerebrospinal fluid.

There is no medication available as yet to cure multiple sclerosis, however, there are treatments that can modify the course of the disease and ease some of the symptoms, including physical therapy and muscle relaxants.

Bell's Palsy

Bell's palsy is a condition causing weakness or paralysis of facial muscles due to dysfunction of cranial nerve VII, the facial nerve. Bell's palsy causes the facial nerve to become inflamed or swollen. This disrupts the relay of nervous system messages. Young adults, of either gender, are more susceptible to this condition although the reason for this is not yet known.



Causes and Symptoms

The affected side of the face will droop around the eye and mouth. This is caused by swelling of the facial nerve at the point where it passes through a narrow opening in the skull. This swelling causes the nerve to become pinched and can lead to further inflammation and nerve dysfunction of the facial nerve. The patient will have problems making facial expressions, closing the eye on the affected side and will have difficulty in eating and drinking. The onset of Bell's palsy is rapid, usually occurring overnight.

Although the exact reason Bell's palsy occurs is not completely understood, it has been linked to virus, infection and autoimmune responses, similar to multiple sclerosis. Possible causes include:

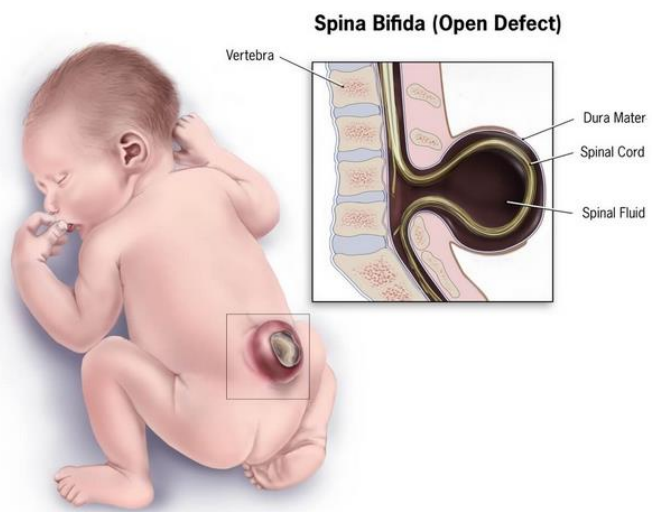
- Lyme disease;
- middle ear infection;
- cold sores and genital herpes;
- German measles;
- human immunodeficiency virus; and
- herpes zoster virus.

Treatment

Corticosteroids can relieve symptoms to some extent when administered rapidly after onset. In most cases, Bell's palsy gets better of its own accord. Some people see improvement after ten days, although it may take some time for symptoms to disappear completely. In rare cases, recovery of normal function of the facial nerve does not take place and facial reconstruction surgery may be indicated to restore facial nerve activity.

Spina Bifida

Spina bifida comes from a Latin term which means split spine. The central nervous system is derived from a precursor structure known as the neural tube, which develops in the first four weeks of pregnancy. Spina bifida is a birth defect caused by incomplete development of the neural tube. This causes the vertebrae surrounding the spinal cord to remain unfused in some areas. Due to this defect, part of the spinal cord and the protective layers covering the cord are exposed and protrude out of the child's back. This is known as a meningocele.



Causes

The exact cause of spina bifida is unknown, although it has been linked to medications such as some anticonvulsants used for epilepsy, an increased body temperature from fever or external sources, obesity, having a relative with spina bifida, and a lack of folic acid in the mother's diet.

Treatment

There is no known cure for spina bifida. Once the baby is born, surgeons will operate to close the gap in the back and restore the spinal column to the spine. Avoiding risk factors linked with development of spina bifida is advised, where possible. If women are overweight, weight reduction before pregnancy should be advised, as well as avoiding the use of anything that raises the body temperature such as hot tubs or electric blankets. The supplementation of the diet with folic acid is generally recommended, even after the first month, as it can still reduce the severity of the condition.



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