

Spina Bifida

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Spina bifida is a **neural tube defect** caused by the failure of the fetus's spine to close properly during the first month of pregnancy. Sometimes there is an **open lesion on the spine** at birth where significant damage to the nerves and spinal cord has occurred. Although the spinal opening can be surgically repaired shortly after birth, the **nerve damage is permanent**, resulting in varying degrees of paralysis of the lower limbs. Even when there is no lesion present, there may be **improperly formed or missing vertebrae and accompanying nerve damage**. In addition to physical and mobility difficulties, individuals may have some form of learning disability. The most common location of the malformations is the **lumbar and sacral areas** of the spinal cord. Individuals with spina bifida more often than not have allergies to latex.

Spina bifida malformations fall into three categories: ***spina bifida occulta***, ***spina bifida cystica (myelomeningocele)***, and ***meningocele***.

Spina bifida occulta is the mildest form of spina bifida although the degree of disability can vary depending upon the location on the spinal column.

In occulta there is no opening of the back, but the outer part of some of the vertebrae are not completely closed. The split in the vertebrae is so small that the spinal cord does not protrude. Many people with the mildest form of this type of spina bifida do not even know they have it or symptoms do not appear until later in life.

Spina bifida cystica or myelomeningocele is the most serious form of this defect. The unfused portion of the spinal column allows the spinal cord to protrude through an opening in the overlying vertebrae. The most severe form leaves the spinal cord open with no overlying skin or membrane. The unfused spinal cord can be surgically closed along with the overlying muscle and skin shortly after birth; however the nerve damage is permanent. There is usually some degree of paralysis and loss of sensation below the level of the spinal cord defect. Thus, the higher the level is of the defect the more severe the paralysis. People may have ambulatory problems, loss of sensation, deformities of the hips, knees or feet and loss of muscle tone.

Many individuals with spina bifida will have an associated abnormality of the cerebellum where the back portion of the brain is displaced from the back of the skull down into the upper neck. In approximately 90 percent of the people with myelomeningocele, hydrocephalus will also occur because the displaced cerebellum interferes with the normal flow of cerebrospinal fluid.

Meningocele (or **meningeal cyst**) is the least common form of spina bifida. The spinal cord and nerves are not involved and their function is normal.

Expert in Spina Bifida? DSES is always looking for volunteers to teach or give presentations!!

Resources and Additional Information

Spina Bifida Association; www.spinabifidaassociation.org

National Institute of Neurological Disorders and Stroke; www.ninds.nih.gov

National Library of Medicine and the National Institute of Health; www.nlm.nih.gov

