

What is Spina Bifida?

One of a series of fact sheets produced by the Family Support Service

Spina Bifida is a fault in the spinal column in which one or more vertebrae (the bones which form the backbone) fail to form properly, leaving a gap or split, causing damage to the central nervous system. To help understand what it is, let us explain about the composition of the nervous system.

The Central Nervous System

The central nervous system consists of the brain and the spinal cord. All activities are controlled by the brain which receives information from touching, seeing, feeling, tasting and hearing. The brain responds to this information by initiating the appropriate movements of different parts of the body. Messages from the brain are carried to different parts of the body by the spinal cord which runs down the centre of the spinal column. This communication system for the body is very important and needs protection

The Spine

The spine is made up of 33 bones or vertebrae. The vertebrae have two main functions. One is to provide anchorage for muscles so that we can move as we dictate to those muscles. The other is to provide protection to the spinal cord.

The Neural Tube

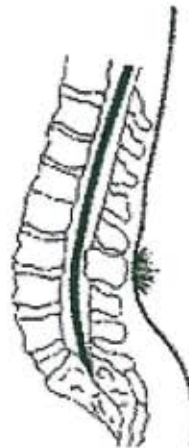
The central nervous system and spine develop between the 14th and 28th day after conception. Spina bifida occurs when there is a failure of development of the bony canal which surrounds the brain and spinal cord. In the spine, the affected vertebrae have a defect at the back and the bony ring does not completely surround the spinal cord. This leaves a gap so that, instead of the posterior arm being whole, it is divided – that is **bifid**. The fault may occur in one or more of the vertebrae but it is most common around waist-level.

Types of Spina Bifida

There are three main types of spina bifida:

Spina Bifida Occulta (hidden)

The term 'spina bifida occulta' is in fact not one but two separate conditions which have completely different consequences. This leads to confusion



when such a diagnosis is used without further explanation. The minor form involving one vertebra in the lower back is not significant and will not pose any problems. Indeed many people only become aware they have this when, for example, they are X-rayed for another condition such as back injury.

For a small number of people, however, the fault is more extensive. Either the split in the spine is bigger, or two or more vertebrae may be involved. There may be visible signs on the skin such as a mole, birth mark, dimple, or a patch of hair. There is a separate factsheet available which discusses this form of spina bifida occulta more fully.

Women with this condition should ask their doctor to prescribe the higher dosage of folic acid when they plan to become pregnant. This can help reduce the risk of their baby being affected by spina bifida.

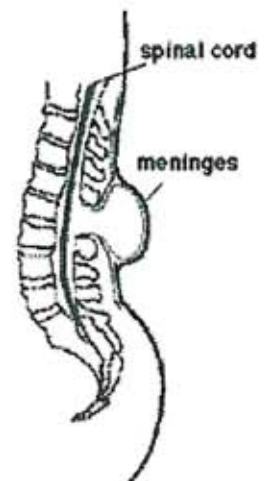
Spina Bifida Cystica (cyst-like)

The visible signs are a sac or cyst, rather like a large blister on the back, covered by a thin layer of skin.

There are two forms:

Meningocele

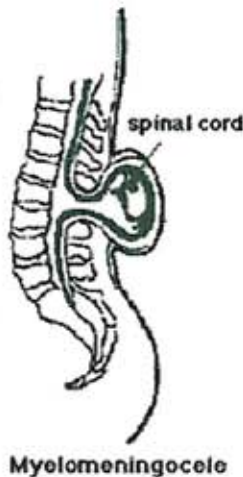
In this form, the sac contains tissues which cover the spinal cord (meninges) and cerebrospinal fluid. This fluid bathes and protects the brain and spinal cord. The nerves are not usually badly damaged and are able to function, therefore there is often little disability present. This is the least common form.



Meningocele

Myelomeningocele (also known as meningocele)

Myelomeningocele is the most serious and more common of the two forms of cystic spina bifida. Here the cyst not only contains tissue and cerebro-spinal fluid but also nerves and part of the spinal cord. The spinal cord is damaged or not properly developed. As a result, there is always some paralysis and loss of sensation below the damaged region. The amount of disability depends very much on where the spina bifida is and the amount of nerve damage involved. Many people with this condition have bowel and bladder problems because of damage to the nerves going to the bowel or bladder from the bottom end of the spinal cord.



Hydrocephalus

Most babies born with spina bifida also have hydrocephalus (from the Greek hydro = water, cephalie = brain). This is an accumulation of cerebrospinal fluid which arises from an imbalance in the production and drainage of that fluid.

A separate factsheet is available on this condition.

Other forms of Neural Tube Defects

Encephalocele

This is a sac which is formed when the bones of the skull fail to develop. It may contain cerebrospinal fluid only. However, part of the brain may also be present in the sac, resulting in brain damage.

Anencephaly

This is where the brain does not develop properly or is absent. This is not compatible with life and the baby is either stillborn or dies shortly after birth.

How and Why Does Spina Bifida Happen?

At present the cause is unknown.

The exact reasons why the tube develops incorrectly are not yet known but it is probably connected with both genetic and environmental factors.

Spina bifida is a defect which is present at birth. In Britain, incidence varies from one area to another. Spina bifida is only partially hereditary. However once there has been an affected pregnancy, there is an increased risk of further spina bifida pregnancies. The risk of an adult with spina bifida having a child with a similar condition is approximately 1 in 25. Consultation with a Genetic Counsellor can be arranged through your General Practitioner to discuss the risk of spina bifida occurring.

A separate factsheet is available on Genetic Counselling.

If you have any questions or would like further information, please do not hesitate to contact the Family Support Workers at:

Scottish Spina Bifida Association - Family Support Service

Address: The Dan Young Building, 6 Craighalbert Way, Cumbernauld, G68 0LS • Tel: 01236 794516 • Fax: 01236 736435

Lo-Call Helpline: 08459 11 11 12 • E-mail: familysupport@ssba.org.uk • Web: www.ssba.org.uk

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