

Spina Bifida



What is Spina Bifida?

Spina Bifida is a neural tube defect. It occurs when the neural tube, which grows into the brain and spine of the embryo, fails to close. There are many forms of neural tube defects.

1. Spina Bifida Occulta (oh-cull-tuh)

In this form, an opening exists in one or more of the bones (vertebrae) that make up the spine. Most of the time there are no symptoms. These openings can be seen by X-ray only. The spinal cord and nerves are normal. In fact, up to 40 percent of all Americans may have this most mild form of the disease. Most of the time children with this form of neural tube defect do not experience problems.

2. Spina Bifida Aperta (ay-per-tuh)

In these forms, the neural tube fails to close, and parts of the vertebrae are missing. A cyst or lump pokes out from the opening in the spine. There are two types of spina bifida aperta:

A. **Meningocele (muh-ninge-oh-seal)**—The cyst is covered with skin and most of the time there is no paralysis. Most children with meningocele grow normally. Children with meningocele should be checked for fluid on the brain (hydrocephalus) and bladder problems so they can be treated promptly.

B. **Meningomyelocele (muh-ninge-oh-my-uh-low-seal)**—This is the most severe form of neural tube defect. The defect contains nerve roots of the spinal cord and the cord itself. There may or may not be a cyst that can be seen. Most often there is damage to the nerves, which cannot be reversed. And, any limb paralysis and bladder and bowel problems will most likely remain. Prompt surgery helps prevent further nerve damage from infection or trauma. A child with meningocele also often has:

- Fluid on the brain (hydrocephalus). A child may need a tube (shunt) to help the flow of brain fluid back into the child's body. About 90 percent of children with meningocele have hydrocephalus.
- Some degree of leg paralysis. This varies by child.
- Bowel and bladder paralysis, which can be managed well.
- Compression of the brain at the base of the skull (this is called Chiari II (key-are-ee) Malformation).

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Meningomyelocele, continued

- A malformed brain and learning disabilities. At least 70 percent of children with spina bifida have normal intelligence, although some children do have learning problems. Some have mental retardation.

Can Neural Tube Defects Be Prevented?

Studies have found that the B-vitamin folic acid may help to prevent spina bifida. Women who could become pregnant should take a vitamin with 400 micrograms of folic acid daily and eat foods rich in folic acid such as green vegetables and whole grains. The key is having enough folic acid in the system before and during the early weeks of pregnancy, before the neural structures close.

How is Spina Bifida Detected?

Blood tests of the mother and an ultrasound of the baby in the uterus may find the defect, although these tests can't prevent spina bifida. Most health care providers now offer pregnant women a blood test called the maternal serum alpha-fetoprotein (MSAFP) screening test. It is part of the "triple screen" test. When a neural tube defect is diagnosed before birth, health care professionals can provide parents with information and support. They can plan for delivery by Cesarean Section to prevent infection and damage to the nerves in the sac. The sac is a bag-like covering that holds the open nerves and tissues that are not closed in the spinal cord. The baby can then have any needed surgery or treatment soon after birth.

Specific Resources

- **Evergreen Spina Bifida Association**
(253) 589-3700
- **Healthy Mothers, Healthy Babies**
1 (800) 322-2588
- **Spina Bifida Association of America**
(SBAA), Washington, DC
1 (800) 621-3141

Internet Sites

- **Spina Bifida Association of American**
www.sbaa.org
- **Management of Myelomenigocele Study**
www.spinabifidamoms.com
- **University of Wisconsin Waisman Center**
Resources for parents of children with spina bifida.
www.waisman.wisc.edu/~rowley/sb-kids/
- **Shriners Hospitals for Children Patient Education**
www.shrinershq.org/patientedu/spinabifida.html
- **Evergreen Spina Bifida Association**
www.evergreenspinabifida.org

Information compiled from March of Dimes and the Division of Genetics and Developmental Medicine of Children's Hospital and the University of Washington.

For More Information

- **Your health care provider**
- **Children's Resource Line:**
(206) 987-2500 or 1-866-987-2500
toll-free Washington, Alaska, Montana, Idaho
- **www.seattlechildrens.org**

This handout has been reviewed by clinical staff at Children's Hospital. However, your child's needs are unique. Before you act or rely upon this information, please talk with your child's health care provider.

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