

## Hydrocephalus Information Sheet

Hydrocephalus is the abnormal buildup of cerebrospinal fluid (CSF) in the cavities, or ventricles, in the brain.

CSF has three important functions

- To keep the brain tissue buoyant, acting as a cushion or "shock absorber."
- To act as the vehicle for delivering nutrients to the brain and removing waste.
- To flow between the cranium and spine and compensate for changes in the amount of blood within the brain.

When there is an imbalance between the amount of CSF produced and the rate at which it is absorbed, the pressure of excessive CSF can damage brain tissues and cause a large spectrum of impairments in the brain.

Hydrocephalus can be present at birth (congenital) or acquired during a person's life due to hemorrhage, meningitis, head trauma, tumors or cysts. Congenital hydrocephalus frequently occurs with other conditions, such as spina bifida or Dandy Walker syndrome.

### Symptoms

Among school-aged children, signs and symptoms may include: abnormal enlargement of a child's head; headache; nausea or vomiting; fever; loss of previously acquired skills, such as walking or talking; blurred or double vision; unstable balance; irritability; change in personality; decline in school performance; seizures and difficulty remaining awake or waking up.

### Treatment

The most common treatment for hydrocephalus is the surgical placement of a tube, or shunt, into the person's body. It consists of a long, flexible tube with a valve that keeps fluid from the brain flowing in the right direction and at the proper rate. One end of the tubing is usually placed in one of the brain's ventricles. The tubing is then tunneled under the skin to another part of the body where the excess CSF can be more easily absorbed — such as the abdomen or a chamber in the heart. People who have hydrocephalus usually need a shunt system for the rest of their lives, and regular monitoring is required.

### Educational Implications

Hydrocephalus may result in significant intellectual, developmental and physical disabilities. Less severe cases, when treated appropriately, may have few, if any, notable complications.

Participation in school activities depends on the individual student.

Visual issues vary from a mild visual deterioration to a marked loss of vision. Some children have poor hand/eye coordination and fine-motor skills, most often reflected in poor handwriting. Headaches may be so severe as to interfere with a student's ability to concentrate. Some children may have seizures.

Some students may have attention issues while others may have difficulties understanding abstract concepts, retrieving stored information, and integrating new information.

## **Educational Options**

Those students whose hydrocephalus adversely affects their educational performance may benefit from special education under the Individuals with Disabilities Education Act (IDEA). To qualify under IDEA, a student must meet eligibility criteria in one of thirteen specific disability categories. IDEA entitles a student with a disability to a free appropriate public education (FAPE) and an individualized education program, including individual goals, objectives, related services, accommodations and modifications.

Students that do not qualify for services under IDEA may qualify under Section 504 of the Rehabilitation Act. To qualify under Section 504, a student must have a physical or mental impairment that substantially limits one or more major life activities (for example learning, breathing, thinking, concentrating, walking, bodily functions). Under Section 504, a student is entitled to equal opportunity, and may qualify for a Section 504 plan that provides regular or special education and related aids and services.

A student with a health condition who does not require special instruction and related services can receive, as appropriate, a wide range of supports in the general education classroom, including accommodations, individualized health plans (IHP), emergency care plans (ECP) and local education agency supports.