

## EVALUATION OF THE CHILD WITH MICROCEPHALY



This fact sheet may help you understand tests that can be done to determine possible causes of microcephaly. It also gives information on other conditions that may be more common in children with microcephaly.

Neurologists from the American Academy of Neurology and the Child Neurology Society are doctors who identify and treat diseases of the brain and nervous system. The following evidence-based\* information is provided by experts who carefully reviewed all available scientific studies on the evaluation of children with microcephaly.

### What is microcephaly?

Microcephaly is a condition where a child has a head circumference that is small compared to the average for children of the same age. Circumference is the distance around the head. Microcephaly is common. It affects more than 25,000 infants in the United States. Microcephaly is not a disease itself. It is an important sign that may point to other conditions.

### What causes microcephaly?

#### What tests can be done to find the cause?

There are many possible causes of microcephaly. A child can be born with microcephaly. He or she can also develop it later, usually by the age of two. Some of the causes are brain injury, infection, genetic disorders, or poor nutrition.

Several new tests can give more information about the causes of microcephaly. Neuroimaging tests (MRI or CT scans) make electronic pictures of the child's head. Genetic tests look at the child's DNA. These tests show whether microcephaly runs in the child's family. Weak evidence suggests that MRI and CT scans are useful. With these tests, the doctor may be able to see abnormal changes in the brain that could be the cause. There is also weak evidence to suggest that specific genetic testing helps in finding the cause. There is not enough evidence to show whether it is useful to test the child's metabolism. If your child has microcephaly, it is very important to find the cause.

### What other conditions are associated with microcephaly?

There is good evidence that children with microcephaly are more likely to have certain neurologic conditions. These include epilepsy, cerebral palsy, mental retardation, and eye and ear disorders. For this reason, it is vital for doctors to recognize microcephaly and check the child for these problems. These conditions often require special treatments. If your child has been diagnosed with microcephaly, your doctor will need to evaluate your child to see if special treatments are needed. Some children with small head size have normal development and may not develop any of these related conditions.

### Having a small head runs in our family. Could it just be in our genes?

Yes, for some families it is possible to have a genetic link to some forms of microcephaly. Even if your child looks like other family members, it is important to see a doctor since your child may be at risk for related conditions. It is also important to tell the doctor about any family history of neurologic disease. If the small head size is genetic, it may be valuable to understand your child's risk of microcephaly or related conditions—especially if you plan to have more children at some point.

### My child has a small head but was premature and has a small body too. What does that mean?

Some children may have small heads and small bodies. This is called proportional microcephaly. However, it is still important for a physician to evaluate your child. Your child may still be at risk of a condition related to microcephaly.

This is an evidence-based educational service of the American Academy of Neurology. It is designed to provide members and patients with evidence-based guideline recommendations to assist with decision making in patient care. It is based on an assessment of current scientific and clinical information and is not intended to exclude any reasonable alternative methodologies. The AAN recognizes that specific patient care decisions are the prerogative of the patient and the physician caring for the patient, and are based on the circumstances involved.

\*After the experts review all the published research studies, they describe the strength of the evidence supporting each recommendation:

*Strong evidence* = More than one high-quality scientific study

*Good evidence* = At least one high-quality scientific study or two or more studies of a lesser quality

*Weak evidence* = The studies, while favorable, are weak in design or strength of the evidence

*Not enough evidence* = Either different studies have found conflicting results or there are no studies of reasonable quality



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