

# Congenital brain defects

Congenital brain defects are abnormalities in the brain that are present at birth. There are many different types of these defects. They can vary greatly from mild to severe conditions. The causes are mainly genetic. However, various offenses on the part of the mother, such as excessive alcohol consumption or drug addiction, are not an exception. Another role is also played by the age of the mother, which is too young or, on the contrary, too old. The reason may also be a febrile illness of the mother during pregnancy or diabetes. Whether the defect is present can be revealed by ultrasound examination or amniotic fluid sampling. If defects are found, the doctor will often recommend an abortion.

## Neural tube defect

We most often encounter a group of defects that are caused by the non-closure of the neural tube, which eventually gives rise to the brain and spinal cord.

### Anencephaly

**Anencephaly** is the absence of a major portion of the brain, skull, and scalp that occurs during embryonic development. A child affected in this way is often stillborn or dies shortly after birth. The condition is also called frog's head for the typically protruding large eyes. There is no cure for anencephaly.

### Encephalocele

Another disease in this group is the so-called encephalocele. Part of the brain with its casings gets out through the skull with a gap that hasn't disappeared. A soft lump the size of a fist or a tennis ball appears on the child's head, most often in the occipital region. The body is covered with skin. One of the causes of this formation can be insufficient development of the skull, when the skull is too small and cannot cover the entire brain.

### Hydrocephalus

A frequent associated disease of encephalocele is so-called hydrocephalus, which literally means brain on water. This is a disorder associated with insufficient outflow of cerebrospinal fluid, where the brain is oppressed by this excess amount of "water" and often protrudes, as there is not enough space for it in the skull. The head of a child affected in this way looks like a soccer ball.

### Holoprosencephaly

Another defect is called holoprosencephaly. It results in underdevelopment or incomplete separation of one hemisphere of the brain. It causes epileptic seizures in more than half of children, and children are often developmentally delayed compared to others.

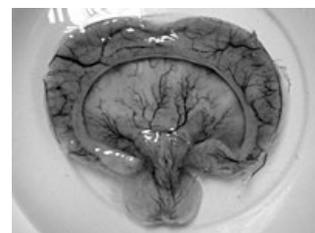


hydrocephalus

## Early closure of one of the cerebral sutures

### Craniosynostosis

Craniosynostosis is manifested by deformation of the brain stem. Having open seams is very important, especially for children up to 6 years old, because they adapt the size of the skull to the growing brain. Any problem is solved operatively, when adhesion is prevented.



Holoprosencephaly

## Agensis of the corpus callosum

Another defect is the so-called agensis of the corpus callosum. It lies in the mutually limited connection between the cerebral hemispheres. The corpus callosum is the structure that is responsible for connecting the two cerebral hemispheres. However, this is not a serious defect and will not manifest itself in any significant way in everyday life.

(physiotherapist's note on the above information: CC agensis is very serious VVV with regard to the child's psychomotor development. It can be associated with milder or more severe mental retardation, with other congenital developmental defects of the cardiovascular system or the optical apparatus with varying degrees of suspension disorders. The child lags very significantly in the development of motor skills and its dependence on the

other person does not disappear, in fact, it is directly proportional to the expressed disorder. Therefore, I do not agree with the above statement that this is a serious defect and that it will not manifest itself in any significant way in everyday life.)

## CNS malformation

Another group are defects caused by various malformations. This means that a certain structure has evolved differently than normal.

### Dand-Walker malformation

This is a malformation where the middle part of the cerebellum, the so-called vermis, is not developed. The consequence is the obstruction of openings important for the circulation of cerebrospinal fluid and hydrocephalus occurs.

### Arnold-Chiari malformation

Similar to Dand-Walker malformation, but not only the cerebellum, but also the medulla oblongata causes obstruction.

### Arachnoid cysts

Another defect is the so-called arachnoid cyst, which develops inside the arachnoid , or spider web. The arachnoid is the middle of the three membranes that surround the brain. Because these cysts often enlarge over time, they are often discovered during examinations of children with headaches and convulsions. In extreme cases, cysts can also cause hydrocephalus.



Arachnoid cyst located temporally

## Links

### Related Articles

- Arachnoid cysts

### External links

- Anencephaly (Wikipedia)
- Hydrocephalus
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### References

- VACEK, Zdeněk. *Embryologie : učebnice pro studenty lékařství a oborů všeobecná sestra a porodní asistentka*. 1. edition. Grada, 2006. ISBN 80-247-1267-9.