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Brain Malformations

Also called: Cephalic disorders

Most brain malformations begin long before a baby is born. Something damages the developing nervous system or causes it to develop abnormally. Sometimes it's a genetic problem. In other cases, exposure to certain medicines [https://medlineplus.gov/pregnancyandmedicines.html], infections [https://medlineplus.gov/infectionsandpregnancy.html], or radiation during pregnancy interferes with brain development. Parts of the brain may be missing, abnormally small or large, or not fully developed.

Treatment depends upon the problem. In many cases, treatment only helps with symptoms. It may include antiseizure medicines, shunts to drain fluid from the brain, and physical therapy.

There are head malformations that do not involve the brain. Craniofacial disorders

[https://medlineplus.gov/craniofacialabnormalities.html] are the result of abnormal growth of soft tissue and bones in the face and head. It's common for new babies to have slightly uneven heads, but parents should watch the shape of their baby's head for possible problems.

NIH: National Institute of Neurological Disorders and Stroke

Diagnosis and Tests

- Brain MRI (Magnetic Resonance Imaging) [https://www.radiologyinfo.org/en/info/mri-brain]
 (American College of Radiology; Radiological Society of North America)
Also in Spanish [https://www.radiologyinfo.org/es/info/mri-brain]
- Cranial Ultrasound [https://www.radiologyinfo.org/en/info/ultrasound-cranial]
 (American College of Radiology; Radiological Society of North America)
Also in Spanish [https://www.radiologyinfo.org/es/info/ultrasound-cranial]
- Head CT [https://www.radiologyinfo.org/en/info/headct]  (American College of Radiology; Radiological Society of North America)
Also in Spanish [https://www.radiologyinfo.org/es/info/headct]

Related Issues

- Congenital Zika Syndrome and Other Birth Defects [https://www.cdc.gov/zika/czs/] (Centers for Disease Control and Prevention)

Specifics

- Absence of the Septum Pellucidum [https://www.ninds.nih.gov/health-information/disorders/absence-septum-pellucidum]
 (National Institute of Neurological Disorders and Stroke)
- Birth Disorders of the Brain and Spinal Cord [https://www.ninds.nih.gov/health-information/disorders/birth-disorders-brain-and-spinal-cord]  (National Institute of Neurological Disorders and Stroke)
- Microcephaly [https://www.cdc.gov/birth-defects/about/microcephaly.html] (Centers for Disease Control and Prevention)
Also in Spanish [https://www.cdc.gov/birth-defects/es/about/microcefalia.html]

Genetics

- Aicardi syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/aicardi-syndrome>]  (National Library of Medicine)
- Amish lethal microcephaly: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/amish-lethal-microcephaly>]  (National Library of Medicine)
- Andermann syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/andermann-syndrome>]  (National Library of Medicine)
- Autosomal recessive primary microcephaly: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/autosomal-recessive-primary-microcephaly>]  (National Library of Medicine)
- Baraitser-Winter syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/baraitser-winter-syndrome>]  (National Library of Medicine)
- Cerebral cavernous malformation: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/cerebral-cavernous-malformation>]  (National Library of Medicine)
- Dandy-Walker malformation: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/dandy-walker-malformation>]  (National Library of Medicine)
- Hartsfield syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/hartsfield-syndrome>]  (National Library of Medicine)
- Isolated lissencephaly sequence: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/isolated-lissencephaly-sequence>]  (National Library of Medicine)
- Lissencephaly with cerebellar hypoplasia: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/lissencephaly-with-cerebellar-hypoplasia>]  (National Library of Medicine)
- Meckel syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/meckel-syndrome>]  (National Library of Medicine)
- Megalencephaly-capillary malformation syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/megalencephaly-capillary-malformation-syndrome>]  (National Library of Medicine)
- Megalencephaly-polymicrogyria-polydactyly-hydrocephalus syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/megalencephaly-polymicrogyria-polydactyly-hydrocephalus-syndrome>]  (National Library of Medicine)
- Microcephaly, seizures, and developmental delay: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/microcephaly-seizures-and-developmental-delay>]  (National Library of Medicine)
- Microcephaly-capillary malformation syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/microcephaly-capillary-malformation-syndrome>]  (National Library of Medicine)
- Miller-Dieker syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/miller-dieker-syndrome>]  (National Library of Medicine)
- Nonsyndromic holoprosencephaly: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/nonsyndromic-holoprosencephaly>]  (National Library of Medicine)
- Opitz G/BBB syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/opitz-g-bbb-syndrome>]  (National Library of Medicine)
- Pallister-Hall syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/pallister-hall-syndrome>]  (National Library of Medicine)
- Periventricular heterotopia: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/periventricular-heterotopia>]  (National Library of Medicine)

- Polymicrogyria: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/polymicrogyria>]  (National Library of Medicine)
- Septo-optic dysplasia: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/septo-optic-dysplasia/>]  (National Library of Medicine)
- Subcortical band heterotopia: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/subcortical-band-heterotopia>]  (National Library of Medicine)
- Trisomy 13: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/trisomy-13>]  (National Library of Medicine)
- Vici syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/vici-syndrome>]  (National Library of Medicine)
- X-linked lissencephaly with abnormal genitalia: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/x-linked-lissencephaly-with-abnormal-genitalia>]  (National Library of Medicine)

Clinical Trials

- ClinicalTrials.gov: Nervous System Malformations [<https://clinicaltrials.gov/search?cond=%22Nervous+System+Malformations%22&aggFilters=status:not%20rec>]  (National Institutes of Health)

Journal Articles

References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: Experiences and Hope in Caregivers of Children With Aicardi Goutières Syndrome. [<https://www.ncbi.nlm.nih.gov/pubmed/40400365>]
- Article: Petroselinic Acid from Apiaceae Family Plants Ameliorates Autoimmune Disorders Through Suppressing... [<https://www.ncbi.nlm.nih.gov/pubmed/40149865>]
- Article: The DNase TREX1 is a substrate of the intramembrane protease SPP... [<https://www.ncbi.nlm.nih.gov/pubmed/40072623>]
- Brain Malformations -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Nervous+System+Malformations%22%5Bmajr%3Aexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bdat%5D+NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+>]

Reference Desk

- Your Brain and Nervous System [<https://kidshealth.org/en/kids/brain.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/kids/brain.html>]

Find an Expert

- National Institute of Neurological Disorders and Stroke [<https://www.ninds.nih.gov/>] 

Patient Handouts

- Brain surgery [<https://medlineplus.gov/ency/article/003018.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003018.htm>]
- Brain surgery - discharge [<https://medlineplus.gov/ency/patientinstructions/000124.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000124.htm>]



MEDICAL ENCYCLOPEDIA

Aicardi syndrome [<https://medlineplus.gov/ency/article/001664.htm>]

Brain surgery [<https://medlineplus.gov/ency/article/003018.htm>]

Brain surgery - discharge [<https://medlineplus.gov/ency/patientinstructions/000124.htm>]

Head CT scan [<https://medlineplus.gov/ency/article/003786.htm>]

Head MRI [<https://medlineplus.gov/ency/article/003791.htm>]

Increased head circumference [<https://medlineplus.gov/ency/article/003305.htm>]

Microcephaly [<https://medlineplus.gov/ency/article/003272.htm>]

Skull x-ray [<https://medlineplus.gov/ency/article/003802.htm>]

Sutures - separated [<https://medlineplus.gov/ency/article/003307.htm>]

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Hydrocephalus [<https://medlineplus.gov/hydrocephalus.html>]

Neural Tube Defects [<https://medlineplus.gov/neuraltubedefects.html>]

National Institutes of Health

The primary NIH organization for research on *Brain Malformations* is the National Institute of Neurological Disorders and Stroke [<http://www.ninds.nih.gov/>]

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