



Cri-du-chat syndrome

Cri-du-chat (cat's cry) syndrome, also known as 5p- (5p minus) syndrome, is a chromosomal condition that results when a piece of chromosome 5 is missing. Infants with this condition often have a high-pitched cry that sounds like that of a cat. The disorder is characterized by intellectual disability and delayed development, small head size (microcephaly), low birth weight, and weak muscle tone (hypotonia) in infancy. Affected individuals also have distinctive facial features, including widely set eyes (hypertelorism), low-set ears, a small jaw, and a rounded face. Some children with cri-du-chat syndrome are born with a heart defect.

Frequency

Cri-du-chat syndrome occurs in an estimated 1 in 20,000 to 50,000 newborns. This condition is found in people of all ethnic backgrounds.

Causes

Cri-du-chat syndrome is caused by a deletion of the end of the short (p) arm of chromosome 5. This chromosomal change is written as 5p-. The size of the deletion varies among affected individuals; studies suggest that larger deletions tend to result in more severe intellectual disability and developmental delay than smaller deletions.

The signs and symptoms of cri-du-chat syndrome are probably related to the loss of multiple genes on the short arm of chromosome 5. Researchers believe that the loss of a specific gene, *CTNND2*, is associated with severe intellectual disability in some people with this condition. They are working to determine how the loss of other genes in this region contributes to the characteristic features of cri-du-chat syndrome.

Inheritance Pattern

Most cases of cri-du-chat syndrome are not inherited. The deletion occurs most often as a random event during the formation of reproductive cells (eggs or sperm) or in early fetal development. Affected people typically have no history of the disorder in their family.

About 10 percent of people with cri-du-chat syndrome inherit the chromosome abnormality from an unaffected parent. In these cases, the parent carries a chromosomal rearrangement called a balanced translocation, in which no genetic material is gained or lost. Balanced translocations usually do not cause any health problems; however, they can become unbalanced as they are passed to the next generation. Children who inherit an unbalanced translocation can have a chromosomal rearrangement with extra or missing genetic material. Individuals with cri-du-chat syndrome who inherit an unbalanced translocation are missing genetic material from

the short arm of chromosome 5, which results in the intellectual disability and health problems characteristic of this disorder.

Other Names for This Condition

- 5p deletion syndrome
- 5p- syndrome
- cat cry syndrome
- chromosome 5p- syndrome
- monosomy 5p

Diagnosis & Management

Genetic Testing Information

- What is genetic testing?
[/primer/testing/genetictesting](#)
- Genetic Testing Registry: 5p partial monosomy syndrome
<https://www.ncbi.nlm.nih.gov/gtr/conditions/C0010314/>

Research Studies from ClinicalTrials.gov

- ClinicalTrials.gov
<https://clinicaltrials.gov/ct2/results?cond=%22Cri-du-Chat+Syndrome%22+OR+%22cri-du-chat+syndrome%22>

Other Diagnosis and Management Resources

- MedlinePlus Encyclopedia: Cri du Chat Syndrome
<https://medlineplus.gov/ency/article/001593.htm>

Additional Information & Resources

Health Information from MedlinePlus

- Encyclopedia: Cri du Chat Syndrome
<https://medlineplus.gov/ency/article/001593.htm>
- Health Topic: Developmental Disabilities
<https://medlineplus.gov/developmentaldisabilities.html>
- Health Topic: Neurologic Diseases
<https://medlineplus.gov/neurologicdiseases.html>

Genetic and Rare Diseases Information Center

- Cri du chat syndrome
<https://rarediseases.info.nih.gov/diseases/6213/cri-du-chat-syndrome>

Additional NIH Resources

- National Human Genome Research Institute
<https://www.genome.gov/Genetic-Disorders/Cri-du-Chat>

Educational Resources

- Genetic Science Learning Center, University of Utah
<https://learn.genetics.utah.edu/content/disorders/rearrangements/>
- Lucile Packard Children's Hospital at Stanford
<https://www.stanfordchildrens.org/en/topic/default?id=structural-abnormalities-deletions-cri-du-chat-and-duplications-pallister-killian-90-P02147>
- MalaCards: cri-du-chat syndrome
https://www.malacards.org/card/cri_du_chat_syndrome
- March of Dimes: Chromosomal Conditions
<https://www.marchofdimes.org/baby/chromosomal-conditions.aspx>
- Merck Manual Consumer Version: Overview of Chromosome and Gene Disorders
<https://www.merckmanuals.com/home/children-s-health-issues/chromosome-and-gene-abnormalities/overview-of-chromosome-and-gene-disorders>
- Orphanet: Monosomy 5p
https://www.orpha.net/consor/cgi-bin/OC_Exp.php?Lng=EN&Expert=281

Patient Support and Advocacy Resources

- 5p- Society
<https://fivepminus.org/>
- American Association on Intellectual and Developmental Disabilities (AAIDD)
<https://www.aaidd.org/>
- Chromosome Disorder Outreach
<https://chromodisorder.org/>
- National Organization for Rare Disorders (NORD)
<https://rarediseases.org/rare-diseases/cri-du-chat-syndrome/>
- Resource List from the University of Kansas Medical Center
<http://www.kumc.edu/gec/support/cri-du-c.html>

Scientific Articles on PubMed

- PubMed
<https://www.ncbi.nlm.nih.gov/pubmed?term=%28Cri-du-Chat+Syndrome%5BMAJR%5D%29+AND+%28%28cri-du-chat+syndrome%5BTIAB%5D%29+OR+%285p-%5BTIAB%5D%29%29+AND+english%5Bla%5D+AND+human%5Bmh%5D+AND+%22last+1800+days%22%5Bdp%5D>

Catalog of Genes and Diseases from OMIM

- CRI-DU-CHAT SYNDROME
<http://omim.org/entry/123450>

Sources for This Summary

- Cerruti Mainardi P. Cri du Chat syndrome. Orphanet J Rare Dis. 2006 Sep 5;1:33. Review.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/16953888>
Free article on PubMed Central: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1574300/>
- Hills C, Moller JH, Finkelstein M, Lohr J, Schimmenti L. Cri du chat syndrome and congenital heart disease: a review of previously reported cases and presentation of an additional 21 cases from the Pediatric Cardiac Care Consortium. Pediatrics. 2006 May;117(5):e924-7. Epub 2006 Apr 3.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/16585274>
- Mainardi PC, Pastore G, Castronovo C, Godi M, Guala A, Tamiazzo S, Provera S, Pierluigi M, Bricarelli FD. The natural history of Cri du Chat Syndrome. A report from the Italian Register. Eur J Med Genet. 2006 Sep-Oct;49(5):363-83. Epub 2006 Jan 13.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/16473053>
- Mainardi PC, Perfumo C, Cali A, Coucourde G, Pastore G, Cavani S, Zara F, Overhauser J, Pierluigi M, Bricarelli FD. Clinical and molecular characterisation of 80 patients with 5p deletion: genotype-phenotype correlation. J Med Genet. 2001 Mar;38(3):151-8.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/11238681>
Free article on PubMed Central: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1734829/>
- Rodríguez-Caballero A, Torres-Lagares D, Rodríguez-Pérez A, Serrera-Figallo MA, Hernández-Guisado JM, Machuca-Portillo G. Cri du chat syndrome: a critical review. Med Oral Patol Oral Cir Bucal. 2010 May 1;15(3):e473-8. Review.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/20038906>
- Sigafos J, O'Reilly MF, Lancioni GE. Cri-du-chat. Dev Neurorehabil. 2009 Jun;12(3):119-21. doi: 10.1080/17518420902975720.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/19466618>
- Wu Q, Niebuhr E, Yang H, Hansen L. Determination of the 'critical region' for cat-like cry of Cri-du-chat syndrome and analysis of candidate genes by quantitative PCR. Eur J Hum Genet. 2005 Apr; 13(4):475-85.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/15657623>
- Zhang X, Snijders A, Segreaves R, Zhang X, Niebuhr A, Albertson D, Yang H, Gray J, Niebuhr E, Bolund L, Pinkel D. High-resolution mapping of genotype-phenotype relationships in cri du chat syndrome using array comparative genomic hybridization. Am J Hum Genet. 2005 Feb;76(2): 312-26. Epub 2005 Jan 4.
Citation on PubMed: <https://www.ncbi.nlm.nih.gov/pubmed/15635506>
Free article on PubMed Central: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1196376/>

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