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# Microcephaly

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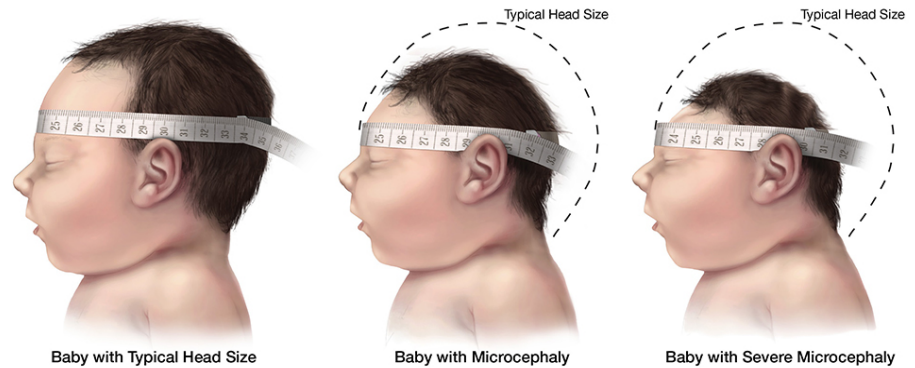
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## Category of Condition

Microcephaly is noncommunicable meaning it cannot be passed on from one person to another in the way a the common cold would. Additionally, it can be categorized as environmental as different factors raise the risk, for example location can raise the risk of an unborn infant developing microcephaly.

## Causes

- ✦ Genetic defect
- ✦ Severe malnutrition
- ✦ Exposure to drugs and alcohol during development
- ✦ Interruption of blood supply to infant's brain
- ✦ Various viruses and infections: Zika, Rubella, Toxoplasmosis, Cytomegalovirus and many more (CDC, 2016)



Baby with Typical Head Size

Baby with Microcephaly

Baby with Severe Microcephaly

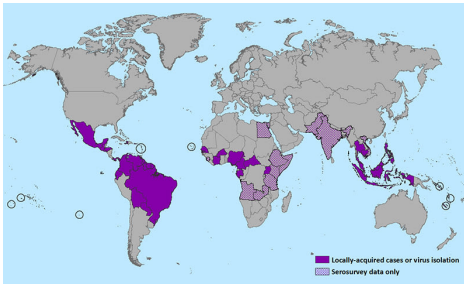
<https://www.cdc.gov/ncbddd/birthdefects/images/microcephaly-comparison-triple-350px.jpg>

## Microcephaly

Microcephaly is where the head of an infant is smaller than what is typical. The head of the infant is examined after birth and then is compared to standard growth charts for diagnosis (CDC, 2016). Microcephaly may cause brain development to be delayed or damaged resulting in delays in developmental milestones. Many babies born with microcephaly may demonstrate no other symptoms at birth but go on to develop epilepsy, cerebral palsy, learning disabilities, hearing loss and vision problems. In some cases, children with microcephaly develop entirely normally (WHO, 2016).

## Epidemiology

In Pernambuco State, Brazil, 2155 microcephaly cases were identified between 1 August 2015 and 15 October 2016, 988 of which satisfied WHO InterGrowth standards for Microcephaly (Jaenisch et al., 2016). The mortality rate of microcephaly is so low it makes it hard to record. Typically, microcephaly is rare, but with these other infections, like Zika, becoming more prevalent, the number of cases has increased. The largest issue in a child contracting microcephaly comes down to their location. Those who live in affected areas with Zika are at a greater risk than those who are not.



<https://gizmodo.com/zika-virus-outbreak-prompts-cdc-to-expand-travel-adviso-1754572559>

## Locations

An increased number of cases of microcephaly have been reported due to a large outbreak of Zika infection, which has a strong correlation between the two conditions. These are the areas with increased amounts of infants born with microcephaly.

- Central America
- South America
- Central African countries
- India
- Vietnam and many more (CDC, 2018)

## Populations Affected

Populations affected the most are those who live in a Zika infected area. Women are affected by the Zika virus because if they become infected with the Zika virus when they are pregnant, the child may develop microcephaly.

## Possible Solutions

While microcephaly is rare, there are preventative steps women can take. The current plan in place is telling women to refrain from becoming pregnant until the outbreak of Zika is better controlled. While this is a sure way to prevent it, it is not practical for families to put their lives on hold for an undetermined amount of time. Additionally, the practice of using contraceptives to avoid pregnancy may not be effective due to strong religious views in these areas. A recent study suggested that there was no increase in sales of contraceptives since the Zika outbreak in Brazil (Diaz-Quijano, Pelissari & Dias Porto Chiavegatto Filho 2018). The two possible solutions have to work together. The first is to educate the people in the affected areas. These people need to know how microcephaly can develop and then lower the risks within that area. Using mosquito repellent and spraying to kill mosquitos are effective in removing possible Zika carrying mosquitos. However, without that large education piece, people will not be willing to change their ways. Public education should include people going town to town and informing the public, especially young women, how to prevent this.

Centers for Disease Control and Prevention [CDC]. (2016). Microcephaly. Retrieved from <https://www.cdc.gov/ncbddd/birthdefects/microcephaly.html>

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Diaz-Quijano, F. A., Maria Pelissari, D., & Dias Porto Chiavegatto Filho, A. (2018). Zika-associated microcephaly epidemic and birth rate reduction in Brazilian cities. *American Journal of Public Health, 108*(4), 514-516. doi:10.2105/AJPH.2017.304260

Jaenisch, T., Rosenberger, K., Brito, C., Brady, O., Brasil, P. & Marques, E. (2016). Risk of microcephaly after Zika virus infection in Brazil, 2015 to 2016. *Bulletin of the World Health Organization, 95*, 191-198. doi: <http://dx.doi.org/10.2471/BLT.16.178608>

World Health Organization [WHO]. (2016). Microcephaly Retrieved from on <http://www.who.int/mediacentre/factsheets/microcephaly/en/>