

Zika virus may be linked to more eye problems in Brazilian babies with microcephaly

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Researchers studying babies with a Zika virus-related birth defect say they have found previously unreported eye problems possibly linked to the virus that could result in severe visual impairment. In three Brazilian infants with microcephaly, the researchers observed retinal lesions, hemorrhaging and abnormal blood vessel development not noted before in relation to the virus. The findings are being published online today in [*Ophthalmology*](#), journal of the American Academy of Ophthalmology.

Zika [virus](#) is now known to cause [microcephaly](#), a [birth defect](#) marked by smaller head and brain size. In Brazil, the site of the most serious outbreak, nearly 1.5 million people reportedly have the virus. Some 4,000 infants were recently born with microcephaly, according to reports. As a result, the World Health Organization declared a [public health emergency](#) in February, bringing added urgency to the need for more research. [A prior study](#) of 29 Brazilian babies with presumed congenital Zika infection showed that a third had [eye problems](#). These included ocular lesions, optic nerve abnormalities and chorioretinal atrophy, a withering of the retina and choroid, the latter of which provides oxygen and nutrients to the retina.

For this case study, ophthalmology researchers from Brazil and Stanford University examined the eyes of three infant boys from Northern Brazil born in late 2015 with microcephaly. All had mothers with suspected Zika virus infections during the first trimester of pregnancy. Among the

findings, the researchers identified several types of ocular issues not previously observed in relation to Zika virus, some of which could cause [visual impairment](#) if untreated. These included:

- **Hemorrhagic retinopathy**, or bleeding in the retina, the light-sensitive layer of cells lining the back of the eye;
- **Abnormal vasculature in the retina**, including signs of missing blood vessels in the retina where the cells may have died; and
- **Torpedo maculopathy**, identified by torpedo-shaped lesions in the macula, the central portion of the retina.

In addition to these observations, the infants in this study also exhibited other ocular symptoms noted in the previous study. Specifically, all three babies in this [case study](#) showed signs of pigmentary maculopathy, lesions that appear as speckles of pigment on the macula. Four eyes had symptoms of chorioretinal atrophy marked by a darkly pigmented ring.

The study is small with limited observational data. However, the findings add to a growing body of clinical information about how the Zika virus may affect children's eye development and vision. The authors noted that it remains unclear whether the viral infection itself causes eye abnormalities or if they are a consequence of Zika-induced microcephaly.

"To my knowledge, the eye problems we found have not been associated with Zika virus before," said Darius Moshfeghi, M.D., senior author and a professor of ophthalmology at the Stanford University School of Medicine. "The next step is to differentiate what findings are related to the Zika virus itself versus microcephaly caused by the virus in order to better understand which infants will need screening."

For now, the authors are calling for all babies with microcephaly in areas hit by Zika to be examined by an ophthalmologist. This is consistent with

recent [screening recommendations](#) made by the Centers for Disease Control and Prevention.

"Until further notice, health professionals in regions endemic for Zika infection are advised to submit all newborns with microcephaly to retinal examinations," the authors wrote. "The procedure can contribute significantly to our understanding of the infection."

More information: Homero Augusto de Miranda et al, Expanded Spectrum of Congenital Ocular Findings in Microcephaly with Presumed Zika Infection, *Ophthalmology* (2016). [DOI: 10.1016/j.opthta.2016.05.001](#)

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