

Zika and glaucoma linked for first time in new study

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Transmission electron micrograph (TEM) of Zika virus. Credit: Cynthia Goldsmith/Centers for Disease Control and Prevention

A team of researchers in Brazil and at the Yale School of Public Health has published the first report demonstrating that the Zika virus can cause glaucoma in infants who were exposed to the virus during gestation.

Exposure to the Zika virus during pregnancy causes [birth defects](#) of the central nervous system, including microcephaly. Brazilian and Yale School of Public Health researchers had reported early during the microcephaly epidemic that the virus also causes severe lesions in the retina, the posterior portion of the eye. However, until now, there has been no evidence that Zika causes glaucoma, a condition that can result in permanent damage to the optic nerve and blindness.

"We identified the first case where Zika virus appears to have affected the development of the anterior chamber or front portion of the eye during gestation and caused glaucoma after birth," said Albert Icksang Ko, M.D., professor at the Yale School of Public Health and co-author of the study published in the journal *Ophthalmology*. Ko has longstanding research collaborations in Brazil and has worked with local scientists since Zika first appeared in the Americas to better understand the birth defects that are caused by the virus and the risk factors for Zika Congenital Syndrome.

While conducting their investigations of the microcephaly epidemic in Salvador in Northeast Brazil, the researchers identified a three-month-old boy who was exposed to Zika virus during gestation. While no signs of glaucoma were present at the time of birth, the infant developed swelling, pain, and tearing in the right eye. The research team diagnosed glaucoma as the cause of symptoms and together with local ophthalmologists, performed a trabeculectomy, an operation that successfully alleviated the pressure within the eye.

While this is the first known incidence of glaucoma in an infant with the Zika virus, clinicians treating patients with Zika should be aware that glaucoma is another serious symptom of the disease that should be monitored, said the investigators. Additional research is needed to determine if [glaucoma](#) in infants with Zika is caused by indirect or direct exposure to the virus, either during gestation or postpartum.

The Zika virus, which is primarily transmitted through infected mosquitoes, has reached epidemic levels in several areas worldwide, and is of particular concern in Brazil, where the Pan American Health Organization reports more than 200,000 suspected cases and 109,000 confirmed cases of the disease. Since the outbreak began in 2015, Zika has now reached the United States, with more than 4,000 travel-related cases reported, and 139 locally acquired mosquito-borne cases confirmed, according to the CDC. There is currently no vaccine for the Zika [virus](#).

Provided by Yale University

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