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Zika may cause brain damage in adults, too

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Zika may pose a danger for far many more of us than pregnant women and babies, a new study suggests.

Mosquitoes have now transmitted the virus in a second area in South Florida, officials announced on Friday, as they advised pregnant women not to travel to the zone in Miami Beach. As the virus spreads in the Americas, with more than 10,000 cases confirmed in the United States, researchers are working to understand its subtleties and develop a vaccine.

In addition to causing the birth defect microcephaly, Zika can wreak havoc in our brains' stem cells, researchers from Rockefeller University and La Jolla Institute for Allergy and Immunology found in a study published in the journal *Cell Stem Cell* Thursday.

The stem cells, known as neural progenitor cells, help replace damaged neurons—the main components of our brain and spinal cord—and assist with learning and memory. Using a mouse model, the researchers found that Zika can target those cells, which can lead to reduced brain volume and complications in brain functioning—similar to the long-term effects of microcephaly.

“Getting infected with Zika as an adult may not be as innocuous as people think,” Joseph Gleeson, the study’s lead author and head of Rockefeller’s pediatric brain disease laboratory, said in a release.

Neural progenitor cells were previously thought to become resistant to Zika as they became neurons in healthy adults, but Gleeson's team's study found that Zika affects the specific cells in adults just as it does in fetuses. Using fluorescent biomarkers, the researchers showed that the areas with the brain’s stem cells were significantly infected.

During fetal development, the Zika virus affects the whole brain evenly. But in adult mice, the researchers found Zika affected only regions specific to neural progenitor cells—though they have yet to test the results of their study in humans.

“It’s a complex disease—it’s catastrophic for early brain development, yet the majority of adults who are infected with Zika rarely show detectable symptoms. Its effect on the adult brain may be more subtle, and now we know what to look for,” said Sujan Shresta, a professor at the La Jolla Institute of Allergy and Immunology and one of the authors of the study, in the release.

The researchers’ findings could also help explain how Zika has been linked to Guillain-Barré syndrome, a disorder in which the body’s immune system attacks its nervous system. The disorder can cause paralysis, and Zika-affected countries have seen more cases, which the researchers say could be the result of losing neural progenitor cells.