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# Miami Herald

Zika dangers could threaten more than just infants, scientists say

By: Jessica Campisi | October 12, 2016

Washington- Research has shown that toddlers and adults – as well as fetuses and infants – could face developmental effects after contracting Zika, and scientists are trying to find out why.

After months of controversy among lawmakers, Congress passed a bill late last month to fund Zika relief efforts, and the virus has continued to spread in countries including the U.S. and Brazil, which is gearing up for its next mosquito season.

Meanwhile, scientists are investigating the dangers of Zika outside the womb.

This summer, the New England Journal of Medicine published a report highlighting a child in Sao Paulo, Brazil, who was infected with Zika for at least 67 days after he was born, allowing scientists to take a closer look at the virus and its impacts on both fetuses and young children.

“It’s well known that there are certain viruses that cause problems in the fetal brain,” said Dr. Deborah Levine, a radiology professor at Harvard Medical School. “But the brain continues to develop after birth, and we don’t know the other (impacts) yet.”

**WE JUST FIND OUT MORE AND MORE TERRIBLE AND INTERESTING ASPECTS OF THIS VIRUS. THE MORE WE LOOK AT THIS VIRUS, THE MORE WE’RE PUZZLED.** Sujan Shresta, professor at La Jolla Institute of Allergy and Immunology and co-author of a Zika study

Levine helped write a separate study that showed that babies with Zika can face severe brain damages “that basically mean no normal outcome,” even after they’ve been born and continue to grow, she said. Even if symptoms are not apparent at first, children are at risk of permanent physical, mental and cognitive effects.

Brain development occurs until a child is about 3 years old, according to the Urban Child Institute. And while a fetus is prone to more serious harm from Zika, it is unknown whether similar developmental problems could also occur in a child bitten by a virus-carrying mosquito, Levine said.

During a pregnancy in which Zika is present, Levine said, most of the fetuses observed showed “unusual” instances of calcium buildup and a loss of white matter in the brain, disrupting development. After this fluid builds up, it decompresses, typically leading to brain folding and an abnormally small head.

As a result, babies infected with Zika could face several developmental issues aside from microcephaly – a typical indicator of the virus – such as potential blindness, deafness and an inability to move normally, Levine said.

“You need the brain for just about everything,” Levine said. “There’s a huge amount of concern for how babies develop and what they’ll be able to do.”

And a study published Aug. 18 that was conducted in part by the La Jolla Institute of Allergy and Immunology revealed it’s not just kids who could be at risk, after results found Zika affected the brains of adult mice.

“It shifted the focus from fetuses to adults, and also children whose brains are still developing,” said Sujan Shresta, a professor at the La Jolla Institute of Allergy and Immunology who’s a co-author of the study. “We’re trying to suggest that this is one more aspect and that we should pay attention to children and adults, too.”

**YOU NEED THE BRAIN FOR JUST ABOUT EVERYTHING. THERE’S A HUGE AMOUNT OF CONCERN FOR HOW BABIES DEVELOP AND WHAT THEY’LL BE ABLE TO DO.**Dr. Deborah Levine, radiology professor at Harvard Medical School

Specifically, she said, the implications Zika has for toddlers and children are “more devastating,” as it affects their memories and ability to learn. In adults, Zika may cause depression or Alzheimer’s disease, according to the study.

A Centers for Disease Control and Prevention report published Sept. 30 found that Zika is typically mild when contracted by children. But, the report warned, doctors should watch for more serious complications.

At the state and local levels, the response to Zika has been centered on identifying and monitoring cases brought in to the U.S. by travelers, running lab tests, getting rid of infected mosquitoes and educating the public, Scott Briscoe, senior communications director for the Association of State and Territorial Health Officials, wrote in an email. There is no vaccine yet, but the National Institutes of Health has entered the first phase of clinical trials for an investigational vaccine.

“We’re putting a lot of effort into decreasing the mosquito population,” Levine said. “We have enough information, but do we have enough money? . . . I would love it if there was more” to address these issues.

In Florida – which had 812 cases of Zika as of last week, according to the CDC – the Department of Health is conducting active investigations, door-to-door outreach and targeted testing, according to its website. Also aiding in the effort are researchers at University of Miami Miller School of Medicine, who are trying to find a vaccine and control the budding mosquito population.

In its last week in session in September, Congress voted to support a bill appropriating \$1.1 billion in funding to address Zika in the United States. Lawmakers had spent months wrestling over the details of the bill, such as provisions that would have kept Puerto Rico Planned Parenthood clinics from getting federal money. Republicans agreed to provide the money without this additional measure.

Florida, New York and Puerto Rico will receive a large portion of these funds, which will aim at protecting more people, but especially pregnant women and children, against the virus.

Shresta said the next step for researchers was to vary the ages and genders of mice used for testing, as well as to use different strains of mice to represent diversity, and to infect them with different strains of Zika to observe the various responses. They’re also investigating the possibility of other bodily fluids besides blood and semen being infectious, she added.

“We just find out more and more terrible and interesting aspects of this virus,” Shresta said. “The more we look at this virus, the more we’re puzzled.”

Using insect repellent is recommended for adults to prevent contraction of Zika, but it shouldn’t be used on babies younger than 2 months, according to the CDC. Parents

should spray insect repellent onto their hands and then apply it to their children, and babies should instead be dressed in clothing that covers their arms and legs.

While Zika has existed around the world for decades and is not a new infection, Levine said, there remains “a lot of hype and worry,” and scientists will continue to investigate the disease and its impacts.

“We’re going to continue to follow” this, Levine said. “This is the beginning of a very severe and sad epidemic.”