



General Information





OBJECTIVES

- Describe the Zika virus disease and its origins
- State the recommendations for pregnant women and others to prevent possible Zika virus exposure
- Articulate the importance of early recognition and of pregnant women seeking care and testing
- Describe the ways Zika virus disease can be prevented
 - ✓ Personal protective actions
 - ✓ Vector control actions
- Discuss the Zika Pregnancy Registry





ZIKA VIRUS

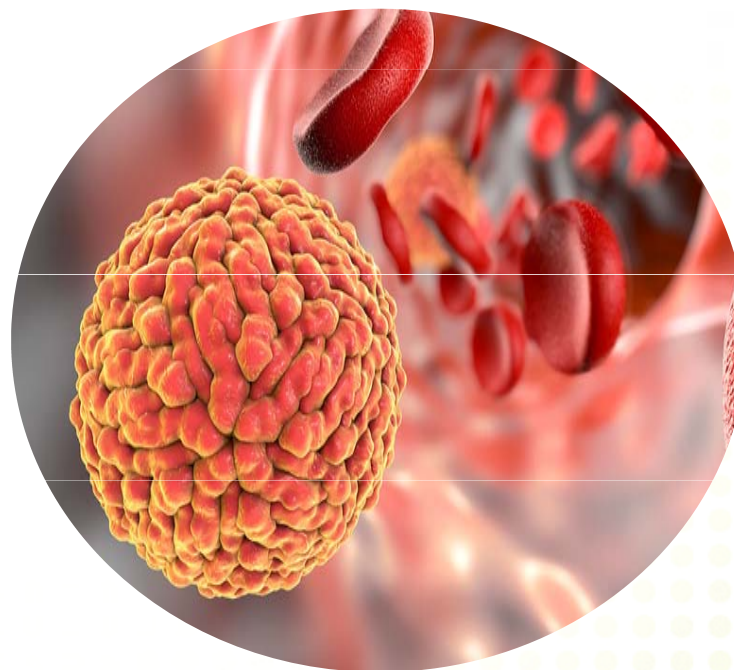
General Information





What is Zika Virus?

- A member of the virus family *Flaviviridae* and the genus *Flavivirus*, transmitted to humans primarily by *Aedes* mosquitoes, such as *A. aegypti* and *A. albopictus*
- Closely related to dengue, yellow fever, Japanese encephalitis and West Nile viruses



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Zika Virus Vectors: *Aedes* Mosquitoes

- *Aedes species mosquitoes*
 - *Ae aegypti* (more efficient vectors for humans)
 - *Ae albopictus*
- These mosquitoes can transmit dengue and chikungunya viruses.
- Species lays eggs in domestic water-holding containers.
- Typically live in and around households.
- Known to be aggressive daytime biters, but can also bite at night.





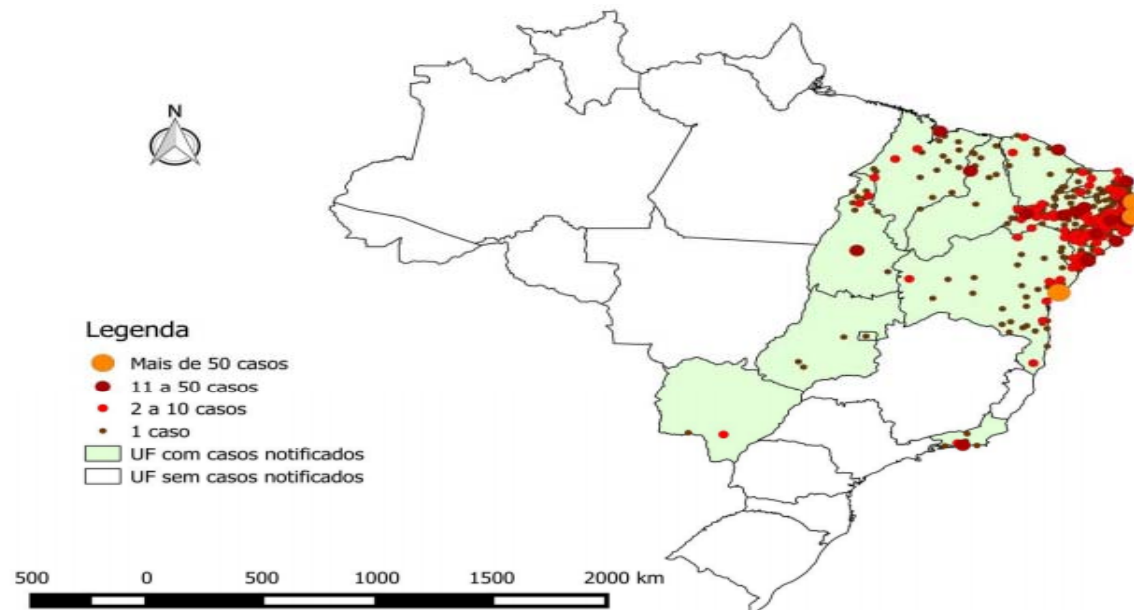
Aedes aegypti and *Aedes albopictus* Mosquitoes: Distribution in the U.S.

- *Aedes* species mosquitoes: *Aedes aegypti* (Yellow Fever mosquito) and *Aedes albopictus* (Asian Tiger mosquito)
- Currently in Alabama, *Aedes albopictus* is found throughout the state, *Aedes aegypti* has not been identified in more than 25 years
- Research suggests that *Aedes albopictus* out-competed and displaced *Aedes aegypti* in the late 1980s



Zika Virus Outbreaks in the Americas

In May 2015, the first locally-acquired cases in the Americas were reported in Brazil



Fonte: Ministério da Saúde e Secretarias Estaduais de Saúde (atualizado em 5/12/2015). Dados sujeitos a alteração.





Zika Virus in the Outbreaks in the Americas

- Currently, outbreaks are occurring in many countries or territories in the Americas, including the Commonwealth of Puerto Rico and the U.S. Virgin Islands.
- Local transmission in the continental United States was reported on June 29 in Florida.
- As of October 12, 2016, Florida has reported 128 cases of locally transmitted Zika virus infection





Countries and Territories with Active Zika Virus Transmission





Other Modes of Transmission for Zika Virus

- Maternal-fetal
 - Intrauterine (inside the womb)
 - Perinatal (just before or after birth)

- Other
 - Sexual
 - Blood transfusion
 - Laboratory exposure

- Theoretical
 - Organ or tissue transplantation
 - Breast milk





Zika Virus in the Continental United States

- As of October 19, 2016, U.S. states and Washington, D.C. have reported a total of 4,016 cases.
 - ✓ 3,878 were travel associated
 - (32 cases of sexual transmission)
 - (137 locally-acquired mosquito-borne cases)
 - (1 laboratory-acquired case)
- U.S. territories have reported a total of 84 travel-related cases and 25,871 locally-acquired cases.
- As of October 6, 878 cases in pregnant women in U.S. and 1,806 cases in pregnant women in U.S. territories.

* On August 4, 2016, the Governor of Florida announced that the Florida Department of Public Health announced that 16 people in the state had been infected with locally transmitted Zika virus.





Reported Clinical Symptoms Among Confirmed Zika Virus Disease Cases

Symptoms	Percent of Incidence
Rash	90%
Fever	65%
Joint Pain	65%
Conjunctivitis (Pink Eye)	55%
Muscular Pain	48%
Headache	45%
Eye Pain	39%
Edema (Swollen Body Parts)	19%
Vomiting	10%

Duffy M. N Engl J Med 2009
Yap Island, 2007





Zika Virus Illness

- Clinical illness is usually mild.
- Symptoms last several days to a week.
- Severe disease requiring hospitalization is uncommon – 4 out of 5 people do not even realize they have the disease.
- Deaths are rare.
- Guillain-Barré syndrome, a condition that causes muscle weakness and in some cases complete paralysis, has been reported in patients following suspected Zika virus infection. (As of October 19, 54 GBS cases have been reported in the 31,418 confirmed cases in the U.S. and U.S. Territories.)





Zika Virus Testing Who should be tested?

- All pregnant women with a history of travel to a Zika affected area during their pregnancy.
 - ✓ Includes Wynwood area in FL if traveled on or after June 15, 2016
 - ✓ Also includes Miami Beach area any time after July 14, 2016, or travel anywhere in Miami-Dade County after August 1, 2016.
 - ✓ Three investigations have been closed with two remaining open as of August.

- All persons with symptoms who traveled to any Zika affected area who present for testing within the recommended time frame.
 - ✓ Must present to their physician for testing within 12 weeks of symptom onset.
 - ✓ Exceptions for pregnant women on a case-by-case basis





Initial Assessment and Treatment

- There is no specific treatment for Zika.
- Current treatment is supportive (i.e., rest, fluids, pain medication, fever reducers).
- Suspected Zika virus infections should be evaluated and managed for possible dengue or chikungunya virus infections.
- Aspirin and other nonsteroidal anti-inflammatory medicines like ibuprofen or naproxen should be avoided until dengue can be ruled out to reduce the risk of hemorrhaging/abnormal bleeding.





Authorization for Zika Testing

- All specimens to be tested for pregnant women **must** be sent to the Bureau of Clinical Laboratories (BCL). Prior to submission, an online consultation form must be submitted.
- **Effective September 9, 2016**, calls for authorization prior to submitting the Zika Consultation Form are only required for testing at birth and for fetal losses. Zika consultation forms should continue to be submitted for all patients for which Zika testing is indicated per CDC's guidance.
- Different diagnostic tests are available to help determine if a person is infected with Zika virus disease. BCL can perform the rRT-PCR and the MAC-ELISA.
- A negative rRT-PCR does not exclude Zika virus testing and must be followed by the MAC-ELISA test for results to be valid and interpretable.





ZIKA VIRUS AND PREGNANCY

General Information





Zika Virus and Pregnancy

- Existing data show:
 - No evidence that pregnant women are more likely to become infected
 - Infection can occur in any trimester
 - Incidence of Zika virus in this population is not known
 - No evidence of more severe effect of the disease in the woman herself, but this is currently being studied



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Zika Virus and Pregnancy

- Illness onset occurs 2-12 days following the mosquito bite.
- Illness is usually short lived, normally lasting less than one week.
- Infected individuals usually do not require hospitalization or experience serious morbidity.
- Rare deaths have occurred.





CDC Recommendations: Pregnant Women Considering Travel

- Pregnant women in any trimester should **NOT** travel to areas where Zika is present.
- Pregnant women who must travel to one of these areas should talk to their health care provider and strictly follow steps to avoid mosquito bites during the trip.
- Pregnant women who have a partner who has traveled to a Zika-affected area should ask their partner to consistently and correctly use a barrier method or abstain from insertive (vaginal, anal or oral sex) and sharing of sex toys for the duration of the pregnancy.





Zika Virus Disease Prevention for Pregnant Women

- Avoid mosquito bites :
 - Use EPA- registered insect repellents
- EPA- registered repellents including DEET are considered safe to use in pregnant and lactating women.
 - Wear long-sleeved shirts and long pants to cover exposed skin.
 - Wear Permethrin-treated clothes.
 - Stay and sleep in screened-in or air-conditioned rooms.
 - Practice mosquito prevention strategies throughout the entire day and night.





Zika Patient Information Fact Sheet



Your health care provider has evaluated you and consulted with the Alabama Department of Public Health (ADPH). You are being tested for the mosquito-borne diseases Zika, Dengue, and Chikungunya because of your exposure history.

An exposure history means you have traveled recently to/from another country or an area within the United States with Zika virus transmission and developed symptoms within two weeks of travel, or you are pregnant with a travel history to a Zika-affected country, or you are pregnant and became symptomatic after a partner traveled to a Zika-affected area. Your health care provider will contact you with the results of the test. Please contact your health care provider with any questions you may have.

While waiting for your test results, please protect others by protecting yourself from additional mosquito bites. Please consistently use an EPA-approved insect repellent. Insect repellents containing DEET, IR3535, picaridin, some oil of lemon eucalyptus and para-methane-diol containing products provide long-lasting protection. You are also asked to wear long sleeves and pants to reduce the likelihood of bites.

Aspirin and other nonsteroidal anti-inflammatory medications (NSAIDs) should be avoided until Dengue virus infection can be ruled out. Medications which are NSAIDs are marketed under many product names including Advil, Motrin, Aleve and other generic names. If you have questions about products containing NSAIDs, please consult your pharmacist.

You are being tested because of the following reason:

- You have an exposure history and are symptomatic (sick); or
- You are pregnant and have recently traveled to a Zika-affected area; or
- You are pregnant and have had unprotected sex with a partner who lives in or traveled to an area with active Zika transmission. (Please begin using barrier methods immediately or abstain from sex for the duration of pregnancy for the protection of your unborn child. The CDC recommends the use of barrier protection such as condoms and dental dams.)

Note: Zika can be passed through sex, even if the infected person does not have symptoms. Sex includes vaginal, anal, and oral sex, and the sharing of sex toys. Couples with a partner who lives in or has traveled to an area with active Zika transmission should use condoms or other barrier methods to protect against infection. For couples in which the partner has symptoms during or on return from an area with active Zika transmission:

- *If partner traveling was female, use barrier methods or abstain from sex for at least 8 weeks after returning.*
- *If the partner traveling was male, use barrier methods or abstain from sex for at least 6 months after returning.*
- *If the partner who traveled has a pregnant partner, barrier protection should be used or abstain from sex for the duration of the pregnancy.*

If a partner travelled (male or female) and never developed symptoms, barrier protection should be used or abstain from sex for at least 8 weeks after returning.

ADDITIONAL INFORMATION CAN BE FOUND ON THE FOLLOWING WEBSITES:
The Alabama Department of Public Health (ADPH): www.adph.org/mosquito

The Centers for Prevention and Control (CDC), Fact Sheets and Posters:
www.cdc.gov/zika/fs-posters/index.html

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Information for Clinicians



Suggested Timeframe to Wait Before Trying to Get Pregnant

Possible exposure via recent travel or sex without a condom with a man infected with Zika		
	Women	Men
Symptoms	Wait at least 8 weeks after symptoms start	Wait at least 6 months after symptoms start
No symptoms	Wait at least 8 weeks after exposure	Wait at least 6 months after exposure Talk with your healthcare provider





Initial Maternal-Fetal Transmission of Zika Virus Discovery

- Evidence of perinatal transmission (during time of delivery)
 - ✓ Zika outbreak occurred in French Polynesia 2013-2014
 - Two pregnant women with signs and symptoms consistent with Zika infection around the time of delivery.
 - Both mothers tested positive for Zika virus.
 - Zika virus infection was confirmed in the newborns, 1-3 days after delivery.
 - Unlikely that the newborns were exposed to mosquitoes.
 - Outcomes regarding microcephaly were not reported.





U.S. Zika Pregnancy Registry

- CDC recently established a national registry to learn about the risks of Zika during pregnancy.
- Collaboration with local, state and health care providers to collect clinical information about pregnancy and infant from birth through the first year of life.
- Knowledge gained will assist in responding to the ongoing outbreak.
- Have already learned additional information about the types of birth defects infants can have and about severity of effects.

The logo for Alabama Public Health, consisting of a blue circle with the words "ALABAMA PUBLIC HEALTH" in white, uppercase letters inside.

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ZIKA VIRUS AND SEXUAL TRANSMISSION

General Information





Zika Virus and Sexual Transmission – What We Know

- There is evidence that the Zika virus can be sexually transmitted by both men and women to their sex partners. As of October 12, 32 cases of sexually transmitted Zika virus infection have been confirmed in the U.S.
- The virus can be spread before, during, or after symptoms are present.
- The virus is present in semen longer than in blood.

* Sexually transmitted cases are not reported for areas with local mosquito-borne transmission of Zika virus because it is not possible to determine whether infection occurred due to mosquito-borne or sexual transmission.





Zika Virus and Sexual Transmission – What We Don't Know

- How long the virus is present in semen in men who have had Zika.
- How long the virus can be spread through sex.
- How often a person with Zika will pass it to sex partners.



Additional Zika Virus and Sexual Transmission Information

- There are tests to detect Zika virus in semen, but they are not widely available. In addition, most clinicians have limited understanding of how to interpret the results of such tests, so CDC does not recommend testing semen at this time.
- Testing of men without symptoms is not recommended because negative results do not mean that the virus is not present and will not change the current guidance on use of condoms.
- Testing of asymptomatic women who are not pregnant is not recommended.





ZIKA VIRUS IN INFANTS AND CHILDREN

General Information





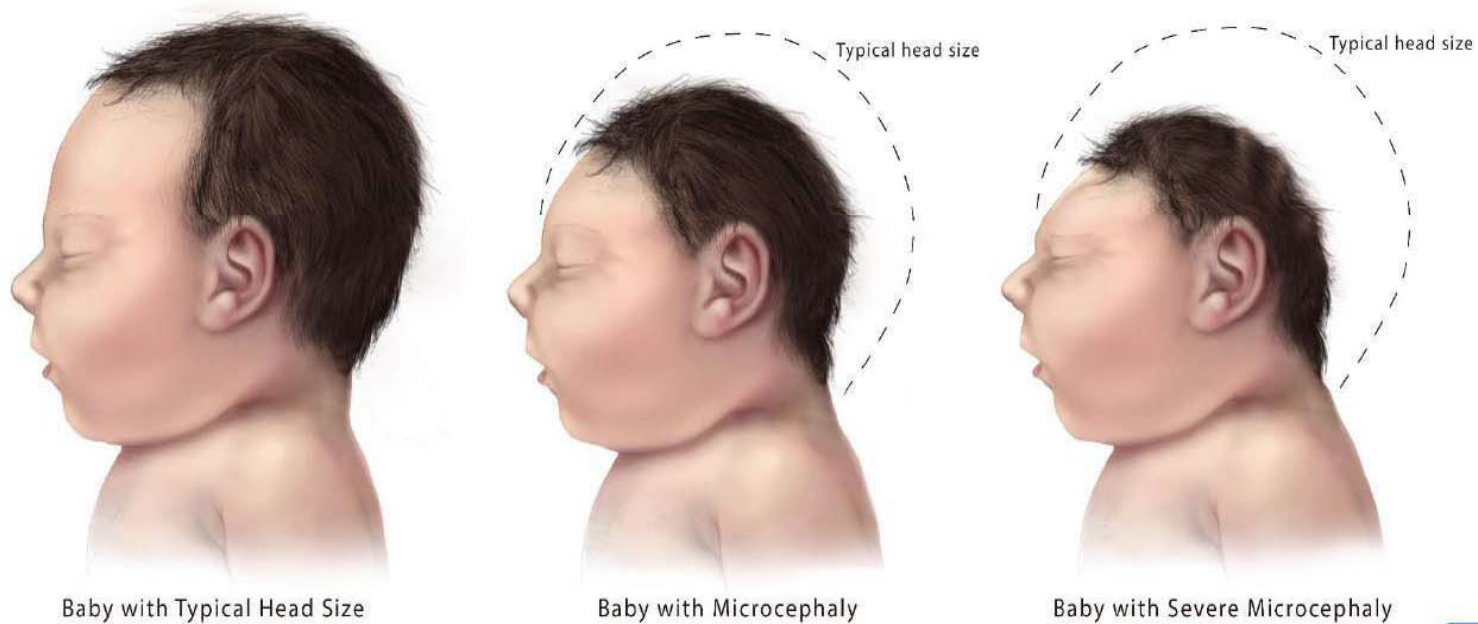
What is Microcephaly?

- Clinical finding of a small head when compared to infants of same sex and age.
- Often leads to cognitive and/or neurologic issues.
- Difficult birth defect to monitor because of inconsistent definition and use of terminology.
- In addition to microcephaly, other neurological birth defects have been found including hearing, visual problems, and impaired growth.





Range of Microcephaly Severity



* As of October 6, 2016, there have been 23 live born infants with birth defects and 5 fetal losses with birth defects reported to the U.S. Zika Pregnancy Registry. CDC websites accessed on October 19, 2016
<http://www.cdc.gov/zika/geo/pregnancy-outcomes.html>



General Information



Zika Virus Laboratory Testing of Infants

- Recommended for
 - Infants with microcephaly, intracranial calcification and other congenital birth defects caused by Zika virus infection born to women who traveled to or resided in an area with Zika virus transmission while pregnant.
 - Infants born to mothers with positive or inconclusive test results for Zika virus infection.
 - For fetal losses of women with positive or inconclusive tests for Zika virus infection.





Recommended Long-Term Follow-Up of Infants with Possible Congenital Zika Virus Infection

- Zika virus is an arboviral disease and must be reported. This includes suspected and confirmed Zika congenital infection.
- Physicians and other providers required to report by ADPH's notifiable disease rules must report cases/suspected cases to ADPH at 1-800-338-8374 for additional guidance.
- CDC has established the U.S. Zika Pregnancy Registry for follow up of women and infants with Zika virus infection.
- For additional information go to <http://www.cdc.gov/zika/pregnancy/index.html>





Alabama Zika Action Plan (AZAP)

General Information





Alabama Zika Action Plan Components

Alabama and other states are developing plans to respond to the threat of local transmission of Zika based on the following risk categories:

- Phase 0*: Preparation – mosquito vector is present or possibly present in our state
- Phase 1*: Mosquito Season – indication of *Aedes* species biting activity in the setting of travel –acquired or sexually - acquired Zika cases in Alabama
- Phase 2: Confirmed Local Transmission – single, locally acquired case or cases in a single household within a two-week period
- Phase 3: Confirmed Multi-Person Local Transmission – Zika infections occurring greater than two weeks apart, but within 1.5km diameter area

*Note: The Alabama Department of Public Health combined Phase 0 and Phase 1 in the Alabama Zika Action Plan.





Vector Control in Alabama

General Information





Vector Control

VECTOR CONTROL GUIDANCE

AVOID THE BITE

Around Your Home

Different types of mosquitoes prefer to lay their eggs in different habitats. Some species prefer woodland depressions or grassy shorelines. Others prefer to lay their eggs in roadside ditches, containers or tree holes. Removing mosquito breeding environments from around your home is the first line of defense against mosquitoes, and one of the most important. Remember, mosquitoes do not need much water to breed.

Take the following steps to protect you and your family:

- Empty containers that can collect water such as buckets, cans and jars, overturned garbage can lids, etc.
- Avoid water collecting on pool covers.
- Turn over or cover anything that can hold water, such as, canoes and other boats, children's wading pools, and wheelbarrows.
- Change the water and scrub the sides of bird baths, animal troughs, and pet watering dishes at least once a week to eliminate mosquito eggs and larvae.
- Check and empty water from children's toys that have been left outside.
- Clear debris from roof gutters and roadside drains.
- Change water in vases and pots holding flowers or plant cuttings at least once a week.
- Dispose of unused tires properly, or store where water cannot collect in them.
- Drill holes in the bottom of recycling containers.
- Empty water collected in tarps around the yard or on woodpiles.
- Plug tree holes with sand or mortar and fill in holes or depression in your yard.
- Repair leaky pipes and outdoor faucets.
- Do not blow or rake grass clippings into roadside ditches.



COMMUNITIES – GET THE WORD OUT	CITY AND COUNTY MUNICIPALITIES AND TOWNS
<ul style="list-style-type: none"> • Ask local churches and stores to post information. • Get neighborhood associations to go door-to-door. • Partner with various populations including Latinos and Poarch Creek Indians. • Conduct presentations at schools and Senior Citizen Centers. • Start a community clean-up program. • Plan a health fair. • Encourage organizations with websites to create a link to www.adph.org/mosquito. 	<ul style="list-style-type: none"> • Distribute mosquito information in city and county areas. • Keep weeds mowed around banks of ponds, sewage waste lagoons, and lakes. • Clean out permanent flower beds in cemeteries located within municipalities. • Clean out water drainage systems such as culverts, storm drains, and roadside ditches that are clogged. • Hold training programs for mosquito control personnel. • Contact local news media to promote activities being done in your area. • Encourage city and county websites to create a link to www.adph.org/mosquito.

Vector Control Guidance Before Mosquito Season - Avoid The Bite | August 8, 2016 | Alabama Department of Public Health



General Information



Summary

- Zika virus continues to circulate and cause locally-transmitted disease in the Americas.
- Consider the possibility of Zika virus infection in travelers with acute fever, rash, arthralgia, or conjunctivitis within 2 weeks after return.
- Pregnant women in any trimester should NOT travel to areas of Zika virus transmission.
- Pregnant women who have a partner who has traveled to areas of Zika virus transmission should ask their partner to use condoms consistently and correctly or abstain from sexual activity for the duration of the pregnancy.
- Go to <http://adph.org/mosquito/index.asp?id=7427> for additional information about Zika.





Questions?





Contact Information

For general information, please call the Alabama Department of Public Health at 1-800-252-1818.

Visit www.adph.org/mosquito for the most updated information.

