Chikungunya
A mosquito-borne disease
Countries and territories where chikungunya cases have been reported* 
(as of July 1, 2014)

*Does not include countries or territories where only imported cases have been documented. This map is updated weekly if there are new countries or territories that report local chikungunya virus transmission.
576,535 chikungunya illnesses since the disease was first diagnosed on French St. Martin in early Dec. 2013
Chikungunya

• Chikungunya is a disease caused by a virus transmitted by mosquitoes
• It is also called “contorted fever” and “that which bends up”
• The virus is called chikungunya virus
• The virus is cycled between mosquitoes and humans
• There is no vaccine against chikungunya virus
Chikungunya

- Two species of mosquitoes can transmit chikungunya virus
- Both mosquito species are present in Florida
  - *Aedes aegypti*
    - Also called the yellow fever mosquito
  - *Aedes albopictus*
    - Also called the Asian tiger mosquito
Chikungunya

• Summer 2014 – outbreaks in the Caribbean
  • Over 500,000 cases just this summer
  • July incidence was at 2,427 cases per 100,000 people in Dominican Republic – that translates to roughly 63,000 cases in Miami-Dade county if they had a similar outbreak
Chikungunya

• July 2014 - >80 IMPORTED cases in Florida
• August 2014 – 150 IMPORTED cases in Florida
  • From people who were infected while visiting an area where outbreaks were on-going
Chikungunya

• July 17, 2014 – reports of first two **LOCALLY ACQUIRED** cases in Florida
  • Miami-Dade and Palm Beach Counties
• Currently – total of **FOUR** locally acquired cases
  • 1 Miami Dade
  • 2 Palm Beach
  • 1 St. Lucie
Chikungunya

• The symptoms of the disease can include:
  • Fever
  • Joint pain
  • Headache
  • Muscle pain
  • Joint swelling
  • Rash
Chikungunya
Chikungunya

• Must be diagnosed by a physician
• Testing is the only way to know for sure if someone is infected with chikungunya virus
• The Florida Department of Health issues mosquito-borne disease advisories, alerts, and threats based on their surveillance information – pay attention to the news releases in your area
Chikungunya

• *Aedes aegypti* and *Aedes albopictus* are container mosquitoes

• The larvae are found in items that hold even very small amounts of water

• The best way to control these mosquitoes is to clean up the yard by removing containers
80 species in Florida

1st – 4th Instar

*Culex nigripalpus*
SOME Florida species do this!
BUT

The species we are concerned about are not coming from the salt marsh. They are *Container Mosquitoes*
Aedes albopictus
Asian tiger mosquito
Chikungunya
Vector: *Aedes albopictus*, the Asian tiger mosquito
Chikungunya

Vector: *Aedes aegypti*, the yellow fever mosquito
Larval habitats of container mosquitoes
Larval habitats of container mosquitoes
Larval habitats of container mosquitoes
Larval habitats of container mosquitoes

• Bromeliad plants can house container mosquitoes in the water-holding tanks

http://entnemdept.ufl.edu/frank/bromeliadbiota/mosbrom.htm
Recommendations to reduce exposure to mosquitoes

• Demand that neighbors respond to clean up property
• NO ONE HAS THE RIGHT TO PRODUCE MOSQUITOES THAT ENDANGER YOU AND YOUR FAMILIES HEALTH
Recommendations to reduce exposure to mosquitoes

- For containers that are used for water collection (i.e., rain barrels), place a screen over the top to prevent mosquitoes from laying eggs in the water
- For bird baths, dump out water and replace with clean water every week
- Get rid of or recycle used tires
- Clean the roof gutters
Recommendations to reduce exposure to mosquitoes

• Yard inspections once per week
  • Remove or modify water-holding items

• Neighborhood clean up events
  • A community effort is needed right now! It requires that everyone participate to reduce these mosquitoes

• Treat water that can’t be dumped out
  • Mosquito dunks (containing a mosquito-specific bacteria, Bti) work very well

• Wear mosquito repellents that have been shown to be effective
Mosquito repellents

• Repellents that are currently available are either synthetic chemicals, such as DEET, or plant derived chemicals such as citronella.

• Various formulations of these repellents are available that differ in the amount of active ingredient, which is the substance that actually repels the mosquito.

• These products are available as sprays, wipe-on's, sticks, foams, and lotions.
<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Product Name</th>
<th>Protection Time</th>
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</thead>
<tbody>
<tr>
<td>OFF! Deep Woods</td>
<td>23.8% DEET</td>
<td>5 hours</td>
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<tr>
<td>Sawyer Controlled Released</td>
<td>20% DEET</td>
<td>4 hours</td>
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<tr>
<td>OFF! Skintastic</td>
<td>6.65% DEET</td>
<td>2 hours</td>
</tr>
<tr>
<td>Bite Blocker for Kids</td>
<td>2% Soybean Oil</td>
<td>1.5 hours</td>
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<tr>
<td>OFF! Skintastic for Kids</td>
<td>4.75% DEET</td>
<td>1.5 hours</td>
</tr>
<tr>
<td>Active Ingredient</td>
<td>Product Name</td>
<td>Protection Time</td>
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<tr>
<td>---------------------------</td>
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<td>-----------------</td>
</tr>
<tr>
<td>Skin-So-Soft Bug Guard Plus</td>
<td>7.5% IR3535</td>
<td>23 minutes</td>
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<tr>
<td>Natrapel</td>
<td>10% Citronella</td>
<td>20 minutes</td>
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<tr>
<td>Herbal Armor</td>
<td>12% Citronella, 2.5% Peppermint Oil, 2% Cedar Oil, 1% Lemongrass Oil, 0.5% Geranium Oil</td>
<td>19 minutes</td>
</tr>
<tr>
<td>Gone Original Wristband</td>
<td>9.5% DEET</td>
<td>0</td>
</tr>
<tr>
<td>Gone Plus Repelling Wristband</td>
<td>25% Citronella</td>
<td>0</td>
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</tbody>
</table>
Mosquito repellents

• It is very important to read the label before using any mosquito repellent and remember the following:

• There are different recommendations for frequency of application for different repellents; do not over apply

• Check the container for an EPA-approved label and registration number
Mosquito repellents

• As with all over-the-counter products, use common sense when applying. Watch for reactions, some people may be allergic to ingredients in the repellent.

• Do not apply to the mouth or eyes, cuts, wounds, or on sunburned or irritated skin.

• To apply to face, spray on hands first and then rub on face.
Mosquito repellents

• Apply ONLY to the parts of the body that are exposed. Some repellents can be applied directly to clothing, but check the label first. Do not apply to skin that will be covered by clothing.

• Do not allow young children to apply repellents.
Mosquito repellents

• Keep in mind that some things may decrease the effectiveness of a repellent such as: activities that cause perspiration, high humidity, high temperature, rainfall, and swimming
Mosquito repellents

- The following types of products that have been advertised as mosquito repellents or control products have NOT been found to be effective
  - Devices the emit sound to repel mosquitoes
  - Consumption of garlic, bananas, Vitamin B
  - Bracelets
  - Bug Zappers
  - Bug patches
To prevent Chikungunya

- Remove container mosquito habitats
- Wear repellents that work
- Stay in touch with local health department