

Heartland Virus and Bourbon Virus – What Do I Need to Know?

Public health scientists are still reviewing information about the people who were infected with Heartland virus. A second virus was discovered during this research. This second virus, called the Bourbon virus, is from a group of viruses also transmitted by ticks.

The Missouri Department of Health and Senior Services (DHSS) has put together a selection of answers to the questions people might ask about the recently discovered Heartland and Bourbon viruses:

What is Heartland virus?

Heartland virus belongs to a group of viruses called phleboviruses. Viruses in the phlebovirus family are found all over the world. Sometimes these viruses can cause people to get sick. Most of the phleboviruses that cause human illness are passed to people through a bite from a mosquito, tick, or sand fly.

What is the history of Heartland virus?

In 2009, two people admitted to a Missouri hospital were later found to be infected with this virus. Both people had illness with fevers, and both recovered. Scientists who study the new virus have named it the “Heartland virus.”

What is being done about Heartland virus?

In 2012, the Missouri Department of Health and Senior Services (DHSS) and the Centers for Disease Control and Prevention (CDC) began working together to learn more about the Heartland virus. Several hospitals in Missouri agreed to try to find other people with the same illness. CDC also began another study for people seen by doctors in other states. These studies may help find out how people get infected with Heartland virus and how to prevent other people from getting it. Also, by studying how the virus affects people, laboratories and doctors will learn more about how to diagnose Heartland virus illness.

What kind of illness does Heartland virus cause?

In general, people identified with Heartland virus infection have suffered a flu-like illness in the months of May to September. They all had a fever, lost their appetite, and were very tired. Some also complained of headaches, muscle and joint aches, diarrhea, or feeling sick to their stomach. All of the cases had low numbers of white blood cells, which fight infection. All of the cases also had low numbers of another kind of cell that helps blood clot. The majority of Heartland virus patients required hospitalization for their illness, but were able to return to their normal health in the weeks and months following their discharge.

How do people get Heartland virus?

Scientific investigations are underway to find out if a bite from an infected tick is how people get Heartland virus illness. Missouri’s most common tick, the Lone Star tick, has been found infected with Heartland virus. The Lone Star tick might become infected with Heartland virus by taking a blood meal from an infected animal.

What is Bourbon virus?

Bourbon virus belongs to a group of viruses called Thogotovirus. Most of the viruses in this group are carried by ticks and are found in Africa, southern Europe, and Central Asia. Only one type of Thogotovirus had been found in the United States before 2014 and that virus was not known to cause illness in people. In 2014, a newly discovered Thogotovirus was found infecting an eastern Kansas man

who reported tick bites in the weeks before his illness began. This virus is being called the Bourbon virus after Bourbon County, Kansas, where the man lived. The man's illness was similar to Heartland virus disease and to ehrlichiosis (another Missouri tick-borne illness), but blood samples tested negative for both of these.

What is being done about Bourbon virus?

In addition to research on the Heartland virus, the CDC is also looking for patients who may be infected with the Bourbon virus. This investigation began in the spring of 2015 in Missouri, Kansas, and other states. The goals are to learn more about how people get infected with Bourbon virus, whether it is transmitted by ticks, and how to prevent people from getting sick. The study also involves laboratory scientists who are working to develop a test that can be used by doctors and laboratories.

What kind of illness does Bourbon virus cause?

To date, a limited number of persons have been found to be infected with Bourbon virus. Among these individuals, symptoms included fever, headache, body aches, diarrhea, and fatigue. All patients were hospitalized. The original Kansas patient did not survive the illness, but it is uncertain what role the Bourbon virus played in the man's death.

How do people get Bourbon virus?

It is not known how people get infected with Bourbon virus. Several patients, however, did report tick bites prior to becoming ill. Scientists hope to learn more about how the Bourbon virus infects people through the studies in Missouri and other states.

What can I do to protect myself and my family?

- Since both Heartland and Bourbon viruses are in families of viruses that can be spread by insects, you should avoid bites from ticks and mosquitoes.
- For mosquitoes, use a repellent that gives you the length of protection you need, based on the amount of time you will be outdoors. Look for EPA-registered products that provide protection time information on the product label.
- For ticks, use an EPA –registered insect repellent on exposed skin and clothing that contains at least 20% DEET, picaridin, or IR3535. Protection time will depend upon the repellent ingredient and concentration. Repellent should always be applied according to package instructions.
- For children two months and older, use a repellent with 30% DEET or less.
- Always follow product instructions. Parents should apply this product to their children, avoiding hands, eyes, and mouth.
- People who work outdoors for a living or who spend a lot of time outdoors may want to consider learning about products that contain permethrin on clothing. Clothing and gear can be pretreated with special permethrin products that adhere to boots, pants, socks, and tents. It remains protective through several washings. The product label will say to do the pretreatment outdoors and let the product fully dry before use.
- Some commercial clothing lines are available pretreated with permethrin.
- Always remember that heavy application of insect repellent is not needed. Read the product label carefully.

What if I think I may be infected with one of these new viruses?

If you feel unwell, you should see your doctor. Your doctor can help figure out what might be the problem. If you had a recent tick or mosquito bite, they may take blood to test for illnesses like tularemia, ehrlichiosis, and West Nile virus. If your doctor is concerned that you may have Heartland or Bourbon virus, they can contact the DHSS.

What happens if I get the Heartland or Bourbon virus?

There is no specific treatment for either virus but a doctor may be able to lessen some symptoms with medicine. You can discuss any concerns you have about your illness with your provider. There are no vaccines against these viruses.

Can I get a test to see if I have been infected with these viruses?

Currently, the tests for Heartland virus and Bourbon virus are not widely available. Researchers and laboratory scientists are working on tests that will help a doctor diagnose an infection. Developing new tests is one of the goals of the research studies.

Can my pets get these viruses?

It is not yet known if either of these viruses can make pets sick. If your pet is ill, you should take it to a licensed veterinarian. Ticks may carry these viruses, so talk with your veterinarian about using tick preventives on your pet.

Other Internet Resources

DHSS Insect Repellent Questions & Answers:

<http://health.mo.gov/living/healthcondiseases/communicable/tickscarrydisease/repellentqa.php>

DHSS Educational Materials Online Order Form - Diseases Spread by Animals and Insects

<http://health.mo.gov/living/healthcondiseases/communicable/tickscarrydisease/orderform.php>

University of Missouri Extension Service Integrated Pest Management Publication G7382, "Ticks"

<http://extension.missouri.edu/explorepdf/agguides/pests/ipm1032.pdf>