

Arenaviruses Fact Sheet

1. **What are the Arenaviruses?** - The Arenaviridae are a family of viruses whose members are generally associated with rodent transmitted disease in humans. Each virus usually is associated with a particular rodent host species in which it is maintained.
2. **How common are Arenaviruses?** - Arenavirus infections are relatively common in humans in some areas of the world and can cause severe illnesses. Arenaviruses that cause illness in humans are listed in the table below:

Virus	Disease
Guanarito Virus	Venezuelan Hemorrhagic Fever
Junin Virus	Argentine Hemorrhagic Fever
Lassa Virus	Lassa Fever
Machupo Virus	Bolivian Hemorrhagic Fever
Sabia Virus	Brazilian Hemorrhagic Fever

3. **When were the members of this virus family recognized?** - The first Arenavirus, lymphocytic choriomeningitis virus (LCMV), was isolated in 1933 during a study of an epidemic of Saint Louis Encephalitis. Although not the cause of the outbreak, LCMV was found to be a cause of aseptic (nonbacterial) meningitis. By the 1960s, several similar viruses had been discovered and they were classified into the new family Arenaviridae. Since Tacaribe virus was found in 1956, new Arenaviruses have been discovered on the average of every one to three years.
4. **Do Arenaviruses cause disease?** - A number of Arenaviruses cause hemorrhagic disease:
 - a. In 1958, Junin virus was the first of these to be recognized. This virus causes Argentine Hemorrhagic Fever in a limited agricultural area of the pampas in Argentina.
 - b. In 1963, Machupo virus, the cause of Bolivian Hemorrhagic Fever, was isolated in the remote savannas of the Beni province of Bolivia.
 - c. Lassa virus, the cause of Lassa Fever, was isolated in Africa in 1969.
 - d. More recently, Guanarito and Sabia viruses were added to this family. They are the cause of Venezuelan Hemorrhagic fever and Brazilian Hemorrhagic fever, respectively.
5. **What kinds of animal hosts do these viruses have?** - These viruses are zoonotic, meaning that, in nature, they are found in animals. Each virus is associated with either one species or a few closely related rodents, which constitute the virus' natural reservoir.
6. **How are Arenaviruses spread?** –

- a. The rodent hosts of Arenaviruses are chronically infected with the viruses; however, the viruses do not appear to cause obvious illness in them. Some Old World Arenaviruses appear to be passed from mother rodents to their offspring during pregnancy, and thus remain in the rodent population generation after generation. Some New World Arenaviruses are transmitted among adult rodents, likely via fighting. Only a portion of the rodents in each host species is infected at any one time, and in many cases only in a limited portion of the host's geographical range. The viruses are shed into the environment in the urine or droppings of their infected hosts.
- b. Human infection with Arenaviruses is incidental to the natural cycle of the viruses and occurs when an individual comes into contact with the excretions or materials contaminated with the excretions of an infected rodent, such as ingestion of contaminated food, or by direct contact of abraded or broken skin with rodent excrement. Infection can also occur by inhalation of tiny particles soiled with rodent urine or saliva (aerosol transmission). The types of incidental contact depend on the habits of both humans and rodents. For example, where the infected rodent species prefers a field habitat, human infection is associated with agricultural work. In areas where the rodent species' habitat includes human homes or other buildings, infection occurs in domestic settings.
- c. Some Arenaviruses, such as Lassa and Machupo viruses, are associated with subsequent person-to-person and nosocomial (health-care setting) transmission. This occurs when a person infected by exposure to the virus from the rodent host spreads the virus to other humans. This may occur in a variety of ways. Person-to-person transmission is associated with direct contact with the blood or other excretions, containing virus particles, of infected individuals. Airborne transmission has also been reported. Contact with objects contaminated with these materials, such as medical equipment, is also associated with transmission. In these situations, use of protective clothing and disinfection procedures (together called barrier nursing) help prevent further spread of illness.

7. For more information about Arenaviruses:

- a. <http://www.cdc.gov/ncidod/dvrd/spb/mnpages/dispages/arena.htm>
- b. Please also review our Lassa virus fact sheet.

This fact sheet provides general information. Please contact your physician and/or veterinarian for specific clinical information related to you or your animal.