Scientists have discovered live Marburg virus in fruit bats in Sierra Leone – the first time the deadly virus has been found in West Africa.

Five Egyptian rousette fruit bats tested positive for active Marburg virus infection. Scientists caught the bats separately at locations in three health districts in Sierra Leone: Moyamba, Koinadugu and Kono. There have been no reported cases of people sick with Marburg in Sierra Leone, but the virus’s presence in bats means people nearby could be at risk for contracting Marburg virus. Marburg virus is a cousin to Ebola virus that causes a similar, often fatal disease in people.

The Marburg virus discovery came through two projects – one led by the Centers for Disease Control and Prevention and Njala University, and another by the University of California, Davis, and the University of Makeni, funded by USAID.

“We have known for a long time that rousette bats, which carry Marburg virus in other parts of Africa, also live in West Africa. So it’s not surprising that we’d find the virus in bats there,” said CDC ecologist Jonathan Towner, who led the CDC team. “This discovery is an excellent example of how our work can identify a threat and help us warn people of the risk before they get sick.”

Scientists have shown that the Egyptian rousette bat (Rousettus aegyptiacus) is the natural reservoir for Marburg virus, which means the bats can carry the virus for a long time without getting sick themselves. They can then pass it on to humans or other animals through their saliva, urine, or feces.

Testing of samples from four of the five Marburg-positive bats found multiple genetically diverse strains. This suggests that Marburg virus has been present in these Sierra Leone bat colonies for many years.

Fruit bats common in Africa
Egyptian fruit bats live in caves or underground mines throughout much of Africa. Marburg virus has been detected in Egyptian rousette bats caught in sub-Saharan Africa, primarily in Uganda and the Democratic Republic of Congo, but also Gabon, Kenya and South Africa.

In eastern and central Africa, these bats can roost in colonies of more than 100,000 animals. However, the colonies of Egyptian fruit bats identified in Sierra Leone so far have been much smaller, which may explain why there have not been any known Marburg virus disease outbreaks in this country.
“That the discovery was made in bats before the recognition of any known human illnesses or deaths is exactly what PREDICT’s One Health approach to disease surveillance and capacity building are designed to do,” said Brian Bird from the UC Davis One Health Institute and Global Lead for Sierra Leone and Multi-Country Ebola operations for PREDICT-USAID.

To date, there have been 12 known Marburg virus outbreaks with direct links to Africa, with the most recent in Uganda in 2017. The largest and deadliest Marburg virus outbreak occurred in Angola in 2005. It killed 90 percent of the 252 people who were infected. Two of the four strains identified among the five Marburg-positive bats in Sierra Leone are genetically similar to the strain that caused the outbreak in Angola. It is the first time scientists have detected these Angolan strains in bats.

Infected Egyptian rousette bats may shed Marburg virus in their saliva, urine and feces as they feed on fruit. Contaminated fruit may then be eaten by people or other animals, raising the possibility of spreading Marburg virus to them. People might also be exposed to Marburg virus through bat bites when they capture bats to eat.

The CDC/Njala and UC Davis/University of Makeni projects both began in 2016 following the massive Ebola outbreak in West Africa, each seeking to discover the Ebola reservoir (the animal that helps maintain the virus in nature by spreading it without getting sick).

For more information about Marburg virus, visit: [www.cdc.gov/vhf/marburg](http://www.cdc.gov/vhf/marburg).

**Comment**

Bats are a common source of emerging infections like Nipah virus, SARS and MERS. The finding show that Marburg virus should be considered in people with symptoms of a haemorrhagic fever with exposure in West Africa.

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