

## Rare human parasite found in US horse for the first time, researchers report

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(Medical Xpress)—A rare, potentially fatal species of parasite never before found in North America has been identified in a Florida horse.

University of Florida veterinarians identified the parasite, called *Leishmania siamensis*, in summer 2011. This particular species of parasite previously had been found only in Thailand and parts of Europe. No *Leishmania* infections of any species had been previously reported in a horse native to the United States.

The UF discovery raises awareness of how widespread the parasite is and suggests a need for watchfulness regarding potential transmission to humans, the researchers said.

"We now know the [parasites](#) that cause this disease also exist here in the U.S. and that we have some insect, presumably the sandfly, that is capable of transmitting the disease," said Sarah Reuss, a clinical assistant professor of large animal medicine at the UF College of Veterinary Medicine. Reuss, UF colleagues and a private practice clinical pathologist described the findings in the September issue of [Emerging Infectious Diseases](#), a journal of the [Centers for Disease Control and Prevention](#). "Our findings raise several potential avenues of further investigation, including the prevalence of this disease in horses in the U.S., a better understanding of the sandfly life cycle and the potential of this leishmaniasis species to be transmitted from animals to humans," Reuss said.

Leishmaniasis is a [parasitic infection](#) spread through the bites of infected sandflies. The disease shows up most commonly in two forms: cutaneous, which causes sores on the skin and is self-healing; and visceral, the most severe form, which affects the entire body and is almost always fatal if left untreated.

After malaria, leishmaniasis is the leading parasitic cause of death in humans. The disease has been found in four continents and is considered to be endemic in 88 countries, including 16 [developed nations](#), according to the [World Health Organization](#). The WHO estimates the worldwide prevalence at 12 million cases, with about 350 million people at risk of infection and about 60,000 people dying from the disease each year. Leishmaniasis is rare in people in the U.S.

"It really hasn't been a disease that has affected Americans, but there are really good data with climate change models that predict sandfly ranges will expand, making this disease much more of a threat because of global warming," said co-author James Wellehan Jr., a veterinarian from the UF research team, who confirmed the presence of the disease in the Florida horse by analyzing the genes of the parasite.

The visceral form of leishmaniasis is endemic in foxhounds in the U.S, associated with a parasite species different from the one found in the Florida horse. But aside from some regional transmission in the Southwest, most of the leishmaniasis skin infection cases in the U.S. are believed to have occurred in animals brought in from countries where the disease is common, or in people who had recently spent time in those countries.

"Thousands of people serving in the U.S. military have returned from Iraq and Afghanistan with cutaneous or visceral leishmaniasis," said Christine Petersen, an associate professor of veterinary pathology at Iowa State University's College of Veterinary Medicine and an expert on

[Leishmania](#) transmission, immune responses and veterinary disease, who was not involved in the study. "In a few cases, these individuals have brought dogs back with them that also have leishmaniasis."

But the horse diagnosed at UF had no history of travel outside of the eastern U.S. The pregnant 10-year-old Morgan mare was treated as an outpatient at the University of Florida Large Animal Hospital for sores inside her left ear. A biopsy done in the field revealed what looked like the rare parasite within inflammatory cells in the tissue. Further tissue sampling and genetic analysis were used to confirm the identity of the disease-causing organism.

Often, leishmaniasis of the skin will resolve without medical treatment. But the mare's sores worsened over time—a development the veterinarians attributed to the pregnancy.

"Many of the horses in other countries that have been diagnosed with leishmaniasis were pregnant, so we think perhaps these horses have pregnancy-altered immune systems and are therefore more vulnerable to the disease," Reuss said.

The drug used to treat horses with the disease in other parts of the world isn't readily available in the U.S., and surgery wasn't an option because the sores were inside the horse's ear. After treatment with anti-fungal drugs, the sores eventually regressed.

Horses housed at home with the affected horse did not show any signs of illness. Though the disease needs the blood-sucking sandfly as a carrier and does not pass directly among horses or between horses and humans, veterinary experts say the discovery of the new parasitic species in the U.S. is cause for increased vigilance.

"As a disease of animals capable of being transmitted to humans,

leishmaniasis requires more attention to ensure we do not have vector-borne transmission within larger areas of the country," Petersen said.

Provided by University of Florida

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