UF IFAS Extension UNIVERSITY of FLORIDA

WEC363
doi.org/10.32473/EDIS-UW408-2015

Facts about Wildlife Diseases: Leprosy[1]

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What is leprosy and how does it spread?

Also known as Hansen's disease, leprosy (*Mycobacterium leprae*) is a bacterial disease infecting the skin and nerves which causes disfigurement, nerve damage, and occasionally lung impairment if left untreated. Leprosy was recognized as an infectious disease as early as 600 BC, and historically people with the disease have been shunned by society. Leprosy is spread between humans via respiratory droplets. In the southeast United States, contact with armadillos and armadillo habitat is a source of infections. Leprosy can maintain dormancy for months or years before signs of infection occur, but patients can become noninfectious and eventually cured after taking multi-drug therapy. Worldwide, 250,000 new cases are reported each year, and in the United States, approximately 150 new cases of leprosy are diagnosed each year.

Leprosy in armadillos

Nine-banded armadillos are the only known natural hosts of leprosy besides humans. Leprosy can be transmitted from armadillo to armadillo but it does not appear to cause symptoms in these animals. The prevalence of leprosy in armadillos in the Southeast is high but it does not appear to infect other wildlife species at this time.

Who is at risk for contracting leprosy?

Humans who handle armadillos, eat armadillo meat, or have contact with others who have leprosy that are not receiving treatment are at risk for contracting leprosy. People working in gardens and the outdoors where armadillos are present are also at risk for contracting leprosy. Two-thirds of the US population with leprosy contracts leprosy abroad, and tropical areas have a higher prevalence of the disease.



Figure 1. Nine-banded armadillo.
Credit: Tom Brakefield, Getty Images Plus

Risk of contracting leprosy is low; according to the CDC, 95% of all adults are naturally immune to leprosy, even if they're exposed to the bacteria causing it. Recent research has indicated that leprosy is a zoonotic disease (can be spread from animals to humans) and the geographic range is expanding (Sharma at al, 2015).

How common is leprosy?

Florida

- 2001–2010: 101 cases
- Prior to 2015: 2–12 cases annually
- 2015: 29 cases
- 2016: 18 cases
- 2017: 16 cases
- Most common counties: Brevard, Volusia, Polk, Hillsborough, and Dade

United States of America

- 2015: 178 cases diagnoses
- Most common states (72% of new cases): Arkansas, California, Florida, Hawaii, Louisiana, New York, and Texas

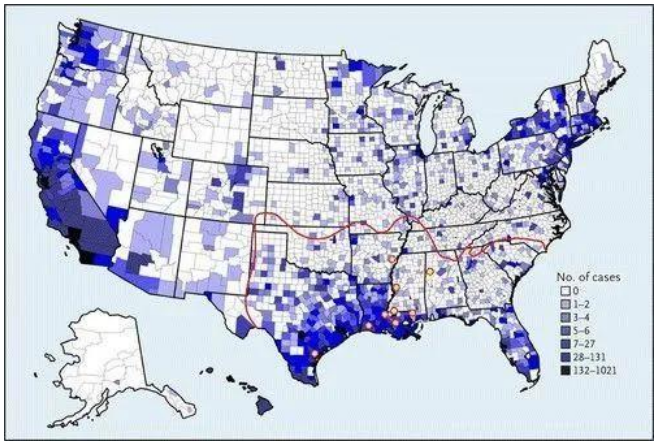


Figure 2. The red line indicates armadillo range limit in the southeastern United States, and the yellow circles are locations where armadillos have been found positive for leprosy as of 2011. In 2015, researchers found armadillos positive for leprosy in south Mississippi, south Alabama, south Georgia, and north and east Florida.
Credit: Massachusetts Medical Society; www.nejm.org

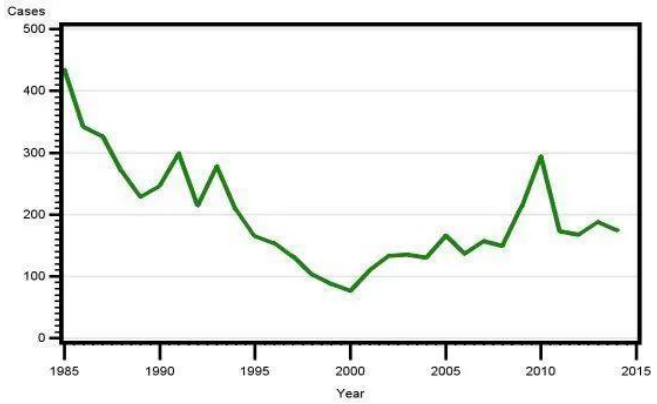


Figure 3. The figure depicts the number of cases each year from 1985–2014 in the United States, where 5,898 new cases were reported in total.
Credit: Health Resources and Services Administration.

World

- Approximately 250,000 new cases each year
- Primarily found in tropical regions
- Most common countries: Angola, Brazil, Central African Republic, Democratic Republic of Congo, Federal States of Micronesia, India, Kiribati, Madagascar, Mozambique, Nepal

What are the symptoms of leprosy?

The first symptoms of leprosy are pale or slightly red areas on the skin and a loss of feeling in the hands or feet. Leprosy is treatable but often misdiagnosed. Medical doctors who encounter patients with skin lesions that have not responded to standard treatments should ask their patients about their history of contact with armadillos. People with these symptoms who have been in contact with armadillos should seek medical attention and report their contact with armadillos to their health care providers. A skin biopsy can be performed to determine if a person has leprosy. Here are other symptoms that may indicate an infection by leprosy:

- Faded or discolored skin lesions
- Thick or dry skin
- Severe pain
- Numbness on affected areas of the skin
- Muscle weakness or paralysis (especially in hands and feet)
- Eye problems leading to blindness
- Enlarged nerves (especially around elbows and knees)
- A stuffy nose
- Nosebleeds
- Ulcers on the soles of feet
- Loss of sense of touch

How can you limit the spread of leprosy?

- Avoid contact with armadillos. If you do handle armadillos, wash your hands thoroughly with soap and water.
- Avoid cooking and consumption of armadillo meat, but if you do eat armadillo meat, cook it thoroughly. Wash your hands and surface areas that had contact with raw meat with soap and warm water.
- If you have contact with an armadillo or an untreated person with leprosy, you may wish to see your doctor.
- Wear gloves while gardening and use good hygiene to avoid diseases in the environment.
- Armadillos can be controlled by:
  - Reducing watering and fertilizing of lawns
  - The use of fences
  - Live-trapping
  - Lethal control

What should you do after a wild animal bite or scratch?

Although armadillos are the only non-human animal currently known to carry leprosy, it is important to use caution around all wild animals as it is possible to contract other diseases. Three steps can be taken if you are injured by an animal, come into contact with saliva from an animal, or receive a cut while processing the carcass of an animal:

1. Immediately scrub the site of infection with soap and running water for 5-10 minutes.
2. Report to your doctor, a clinic, or an emergency room promptly so a medical professional can treat the wound and determine if you should receive any post-exposure prevention measures.
3. Call your County Health Department or County Animal Control Agency and give a detailed description of the animal you were in contact with plus information on your location at the time the incident occurred.

In the rare case of infection with leprosy, the National Hansen's Disease Program provides patient care and oversees clinics throughout the United States. Their contact information is:

National Hansen's Disease Program
1770 Physicians Park Drive
Baton Rouge, LA 70816
1-800-642-2477
For more information visit
http://www.hrsa.gov/hansensdisease/

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[1]This document is WEC363, one of a series on *Wildlife Diseases: Risks to People and Animals* from the UF/IFAS Department of Wildlife Ecology and Conservation. Original publication date December 2015. Revised January 2019. Visit the Ask IFAS website at https://ask.ifas.ufl.edu for the currently supported version of this publication. © 2026 UF/IFAS. This publication is licensed under CC BY-NC-ND 4.0

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