

Just the Facts...

Leptospirosis

What is leptospirosis?

Leptospirosis is a disease caused by a number of different bacteria in the genus *Leptospira* that affects humans and animals. It is a zoonotic disease (transmitted from animals to humans).



Photo: The Travel Doctor

Where does leptospirosis occur?

Leptospirosis is worldwide in distribution, but is most common in temperate and tropical climates. The disease is an occupational hazard for rice and sugarcane fieldworkers, farmers, fish workers, miners, veterinarians, workers in animal husbandry, sewer workers, and military troops. Leptospirosis appears to be increasing as an urban hazard, especially during heavy rains when flooding occurs. In recent years outbreaks have been reported from Asia, Europe, Australia, and the Americas.

How do people get leptospirosis?

Outbreaks of leptospirosis are usually caused by exposure to water contaminated with the urine of infected animals. Many different kinds of animals carry the bacterium, to include cattle, pigs, horses, dogs, rodents, and wild animals. Humans become infected through contact with water, food, or soil containing urine from these infected animals. This happens by swallowing contaminated food or water. Exposure also occurs through skin contact, especially the eyes or nose or with broken skin when swimming, wading in floodwaters, accidental immersion, or occupational abrasion. Exposure may also occur by direct contact with the urine or tissues of infected animals or inhalation of aerosolized droplets of contaminated fluid. In the military, troops are often exposed to leptospirosis found in wild rodent populations. Rodent excreta are commonly flushed from burrows, runs, etc. into the water systems, so leptospirosis frequently follows natural drainages. Flooding enhances the likelihood of transmission from animals to man because it brings the animals in closer contact with humans and it disseminates the infectious urine of animals, resulting in the exposure of many more people.

What are the symptoms?

In humans there are a wide range of symptoms, to include high fever, severe headache, chills, muscle aches, and vomiting, and may also include jaundice (yellow skin and eyes), red eyes, abdominal pain, diarrhea, or a rash. Some infected persons may have no symptoms at all. If the disease is not treated, the patient could develop kidney damage, meningitis (inflammation of the membrane around the brain and spinal cord), liver failure, and respiratory distress (Weil's disease). In rare cases death occurs. Recovery of untreated cases can take several months.

How soon after exposure do symptoms appear?

Symptoms usually appear 5 to 14 days after exposure, with a range of 2 to 30 days.

What is the period of communicability?

Direct person-to-person transmission is rare. However, *Leptospira* may be excreted in the urine for 1 month, although the organisms have been found in humans and animals for months, even years after acute illness.

How is leptospirosis diagnosed?

Leptospirosis can be diagnosed by culturing the *Leptospira* bacteria from body fluids (first 7 days), from cerebrospinal fluid (days 4 to 10), and from urine (after the 10th day) following symptom onset using special media. Diagnosis can also be made by detection of rising antibody titers in specific serologic tests. Because of non-specific signs and symptoms during infection, leptospirosis is frequently not considered as a diagnosis until later in illness and can compromise outbreak recognition and disease control.

Can someone be reinfected with leptospirosis?

Once a person has leptospirosis, they will be immune to another infection with that same strain of *Leptospira*. However, infection can occur with a different strain and illness may occur again.

What is the treatment for leptospirosis?

Specific antibiotics, such as doxycycline or penicillin may be prescribed. Prompt treatment, preferably before the 5th day of illness, may reduce the duration of fever and hospital stay. Intravenous antibiotics may be required for persons with more severe symptoms. Persons who are thought to have symptoms suggestive of leptospirosis should seek medical help immediately.

How can leptospirosis be prevented?

The disease is prevented through good sanitation. Rodent control and the prevention of contamination with the urine of infected animals also help minimize the risk of spreading the disease. Eliminate sources of food and harborage attractive to rodents. Fit secure lids to all rubbish containers to discourage rodents. As the rainy season ends and streams begin to dry up, *Leptospira* become concentrated and are an increased threat to those who may bathe in, or drink the water. Therefore, avoid wading, bathing, or drinking untreated water. Wear boots and gloves when working in potentially contaminated water or soil. Wash your hands regularly before smoking or eating. Shower thoroughly after working in a potentially contaminated area. Thoroughly wash hands and arms in soapy water after handling animals or carcasses (e.g., rat traps) or after coming in contact with liquids that may be contaminated. Avoid hand to mouth, nose and eye contact (especially avoid smoking) while handling animals that may be infected.

References:

Heyman, David L., M.D., editor, Control of Communicable Diseases Manual, 18th edition, American Public Health Association, 2004.

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