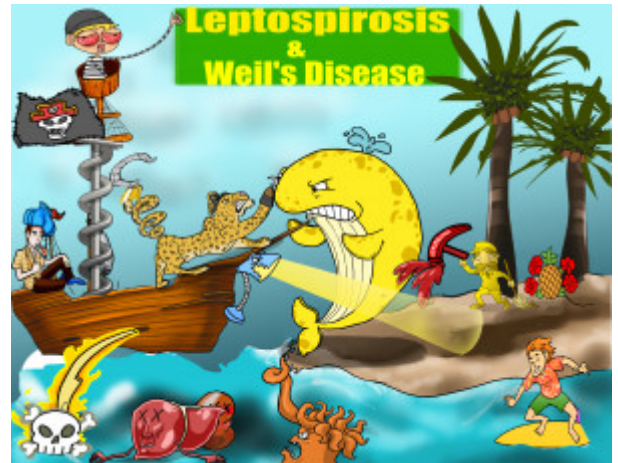


## Leptospirosis and Weil's Disease

Leptospirosis, and its more severe phenotype, Weil's disease, is a zoonotic disease that often occurs in tropical regions where water is contaminated with animal urine. The disease is caused by *Leptospira interrogans*, a spirochete with hooked shaped ends. Clinical features include flu-like symptoms, photophobia, and conjunctival suffusion. Weil's disease may present with liver and kidney dysfunction, jaundice, hemorrhage, and anemia.



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### Epidemiology

#### Tropical Regions

##### [Tropical Hawaiian Surfer](#)

Human infection usually results from exposure to animal urine in contaminated water or soil. Leptospirosis is prevalent among people who spend a lot of time around water sources (e.g. surfers, sewer workers, and farmers) particularly in tropical areas (e.g. Hawaii).

#### Water Contaminated with Animal Urine

##### [Ocean with Toxic-Urine](#)

Portals of entry for *Leptospira* include cuts or abraded skin, mucous membranes, or conjunctivae. This is especially common in people who spend a lot of time around contaminated water sources.

### Characteristics

#### *Leptospira interrogans*

##### [Leopard-spiral](#)

The genus *Leptospira* contains 22 species among which 10 are considered pathogenic. *L. interrogans* is the most common organism causing leptospirosis.

#### Spirochete

##### [Spiral-spirochete Staircase](#)

Leptospirosis is caused by pathogenic spirochetes of the genus *Leptospira*. Spirochetes are a group of spiral-shaped bacteria.

#### Hooked Shaped Ends

##### [Hooked-End-Tail](#)

*Leptospira* can be distinguished morphologically from other spirochetes by their unique "question mark" hook at the end of the bacterium.

### Clinical Features

#### Flu-like Symptoms

##### [Thermometer and Ice-bag](#)

Leptospirosis presents with flu-like symptoms such as myalgias (classically of calves), fever, photophobia, headache, and gastrointestinal distress.

#### Conjunctival Suffusion

##### [Convict-Red-Eyes](#)

Conjunctival suffusion is conjunctival erythema without the classic exudates seen in conjunctivitis. In leptospirosis, conjunctival suffusion is commonly bilateral and diffuse.

## **Photophobia**

### [Lamp-Monster](#)

Photophobia is a common symptom in patients with leptospirosis. They may also complain of retro-orbital pain.

## **Weil's disease**

### **Liver and Kidney Dysfunction**

#### [Dead Kidney and Liver](#)

Weil's disease or icterohemorrhagic leptospirosis is a severe form of leptospirosis that can progress to acute liver and kidney failure. Clinical features are due to systemic spread and multiorgan involvement.

### **Jaundice**

#### [Jaundice-janitor](#)

Involvement of the liver causes hepatitis which can result in jaundice. Although the exact pathomechanism is not well understood, it is thought that *Leptospira* invades intercellular junctions between hepatocytes causing bile to leak. Other features of acute liver failure may be evident.

### **Hemorrhage**

#### [Hemorrhage-hammer](#)

Patients with Weil's disease are at increased risk of bleeding events. Several mechanisms have been implicated such as increased vascular permeability, complement activation, and immune-mediated damage to cells. Pulmonary hemorrhage can result in hemoptysis and is a major cause of death in these patients.

### **Anemia**

#### [Anemone](#)

Anemia can be attributed to widespread hemorrhage. Consider blood transfusions for precipitous drops in hemoglobin.