



GUIDANCE NOTE:  
LEPTOSPIROSIS AND WEIL'S DISEASE  
OCTOBER 2011

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Leptospirosis is an infectious disease which may show no symptoms, mild flu-like symptoms, or develop into a severe illness called Weil's disease with jaundice and kidney failure. It is caused by an infection with the bacterium *Leptospira interrogans*.

You can become infected by drinking contaminated water, or if contaminated water or soil comes into contact with your eyes, mouth, nose or open cuts and wounds. Water or soil can be contaminated through the urine of wild and even some domesticated animals infected with the bacteria. The national rat population is increasing and between 50 and 60 percent of rats carry the bacterium.

In England and Wales an average of 50-60 cases of leptospirosis are reported each year however very few of these are fatal.

The nature of leisure water activity means that the average age of this at-risk group is fairly young with most cases occurring in the 13-42 age group.

## ABOUT THE ILLNESS

The bacterium enters the human body through breaks in the skin such as cuts, blisters and abrasions or via the lining of the nose, throat or alimentary tract if water is swallowed.

Symptoms usually develop 7-21 days after initial infection, however the incubation period can be anything from 2-30 days and the infection is usually systemic (affecting the whole body) causing a sudden fever. In mild cases it lasts a few days, following a pattern similar to flu but often in two phases - a period of illness lasting a few days, then a slight recovery, then a second period of illness. In mild cases the second phase lasts a short time and the patient recovers, but in severe types the illness develops and progresses rapidly, leading to organ failure and often death if not treated with intervention and support.

Leptospirosis starts suddenly, with a severe headache, redness in the eyes, muscle pains, fatigue and nausea and a fever of 39°C (102°F) or above. There is sometimes a red non-blanching pinprick rash on the skin, similar to that seen in meningitis. Young children can be tired or distressed and may show an aversion to bright light. People can also feel depressed or confused during this phase.

**If any of these symptoms appear it is vital that the person sees a doctor as soon as possible. It is also important that the doctor be told of any water borne activity as the symptoms are easily confused with those of flu and if the patient has a clean occupation the possibility of Weil's Disease may be overlooked in the early stages.**

In mild cases these symptoms can be easily treated and patients will likely recover in a few weeks. In more serious cases an early blood test will help to ensure the right treatment can be administered as soon as possible.

Laboratory testing of blood will confirm the diagnosis but this may take undue time in an ordinary hospital lab. Send the samples direct to:

Leptospira Reference Unit  
Department of Microbiology and Immunology  
County Hospital  
Hereford  
HR1 2ER

[leptospira.lru@hhtr.nhs.uk](mailto:leptospira.lru@hhtr.nhs.uk)

Tel: 01432 277707

with a request form (Annex 1) where they will be tested within 24 hours. Treatment is usually with penicillin antibiotics (alternatives are available for those with a penicillin allergy). Maintaining a healthy diet with all the proper vitamins and minerals is very important during recovery, and patients that feel fatigued should rest as much as they need to - fighting it off and continuing to work can make recovery a lot slower.

## RATS AND THE ILLNESS

The rat is a creature of the water's edge. The *Leptospira* bacterium is passed in urine and, while it does not live long in dry conditions, can survive for some time in water. Salt water soon kills off the organism but there is a significant risk in tidal waters such as lower parts of the Thames and other rivers. The risk increases upstream and is greatest in canals, ponds or areas of slowly draining water. There is a significant risk to users of river banks or reservoir edges.

## WATER USERS

Water users including sailors, windsurfers and swimmers are at risk in any area with a population of rats or other animals which may be carrying the *Leptospira* bacterium. There is no reason you shouldn't participate in freshwater activities but it is worth taking note of some simple precautions which can further reduce your risk illness.

## PREVENTION

It is advisable to cover any blisters, cuts or broken skin with a waterproof plaster before going afloat or to the dinghy park. Such protection will also apply to club working weekends when members may be clearing old structures or other hazards. Water users should also shower with soap after freshwater activities. These precautions will also reduce your risk of catching hepatitis A or giardiasis through freshwater activities.

Every sailing club should have available to members at all times a supply of clean fresh water and soap to wash wounds and a shower for those who may have fallen into suspect water. During Winter Frostbite series it is important that such washing water is still available from a stand pipe if the club's water has been turned off to reduce the risk of frost damage.

Waterproof surgical plasters of an adequate size must be readily available for the use of those injured whilst sailing.

If no soap is available then it is important to let uninjured skin dry; the bacteria will survive on the skin as long as they remain moist, so leaving your skin to dry is the next best option. Where you have come into contact with contaminated water, drying your skin will kill *Leptospira* within a few minutes.

## FOOD RESIDUES

Every effort must be made to see that food residues are removed from the club house, boat and trailer parks or picnic areas. A happy well-nourished rat will produce more rats.

If a rat population is suspected the Local Environmental Health Officer should be informed and requested to take action. If poison is laid, members should be warned so that pets and children come to no harm.

## GENERAL CARE

Handrails, steps and walkways should be checked for gaps, nails or rough edges that may cause minor wounds.

If rats have been noted in a particular area, steps should be taken to inform members and a warning notice displayed.

Children's play areas and refuse areas should be monitored with particular care. Refuse should be disposed of regularly either by collections, burning or some other means.

Wear shoes to protect the feet from cuts.

Do not allow water to collect inside your dinghy - it may be wet but it may not be water!

Cruiser owners: do not think this is solely a dinghy sailor's problem. If you have ever had to come ashore clutching at a jetty from your tender – you too are at risk.

## MORE INFORMATION

The Leptospirosis Information Center

[www.leptospirosis.org](http://www.leptospirosis.org)

Health Protection Agency

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/Leptospirosis/>

NHS

<http://www.nhs.uk/Conditions/Leptospirosis/Pages/Introduction.aspx>

## ANNEX 1 LEPTOSPIRA REFERENCE UNIT REQUEST FORM

(See form on the following page)

# LEPTOSPIRA REFERENCE UNIT HPA Collaborating Laboratory

Dept of Microbiology & Immunology, County Hospital, HERFORD HR1 2ER Enquiries: 01432 277707 Fax: 01432 351396

PLEASE USE THIS FORM FOR ALL REQUESTS TO THE LEPTOSPIRA REFERENCE UNIT

The following information is required to aid the diagnosis and epidemiology of leptospirosis please complete ALL sections

SURNAME ..... FORENAME(S) ..... SEX M/F AGE ..... (YRS)

DOB ..... / ..... / ..... POSTCODE ..... NHS No: .....

<b>Clinical Details</b>	<b>Occupation</b>	<b>Water contact</b>	<b>Animal contact</b>
<input type="checkbox"/> Flu-like illness <input type="checkbox"/> Headache <input type="checkbox"/> Myalgia <input type="checkbox"/> Pyrexia <input type="checkbox"/> Lethargy <input type="checkbox"/> Malaise <input type="checkbox"/> Vomiting <input type="checkbox"/> Diarrhoea <input type="checkbox"/> Conjunctivitis <input type="checkbox"/> Abnormal LFTs <input type="checkbox"/> Jaundice <input type="checkbox"/> Hepatic failure <input type="checkbox"/> Renal failure <input type="checkbox"/> Meningitis <input type="checkbox"/> No symptoms <input type="checkbox"/> Died <input type="checkbox"/> Medical screen <input type="checkbox"/> Other (specify) <input type="checkbox"/> Pulmonary haemorrhage	<input type="checkbox"/> Farmer - arable <input type="checkbox"/> - livestock <input type="checkbox"/> Farm worker - arable <input type="checkbox"/> - livestock <input type="checkbox"/> Outdoor - manual <input type="checkbox"/> - with animals <input type="checkbox"/> Fish - farmer <input type="checkbox"/> - worker <input type="checkbox"/> - filleter <input type="checkbox"/> Abattoir - worker <input type="checkbox"/> - butcher <input type="checkbox"/> Indoor - manual <input type="checkbox"/> - office <input type="checkbox"/> - domestic <input type="checkbox"/> Water worker-sewage <input type="checkbox"/> - plumber <input type="checkbox"/> Veterinarian <input type="checkbox"/> Medical <input type="checkbox"/> Military <input type="checkbox"/> Teacher <input type="checkbox"/> Student <input type="checkbox"/> Housewife <input type="checkbox"/> Retired <input type="checkbox"/> Unemployed <input type="checkbox"/> Other (specify)	<input type="checkbox"/> Water sport <input type="checkbox"/> - swimming <input type="checkbox"/> - rowing <input type="checkbox"/> - windsurfing <input type="checkbox"/> - canoeing <input type="checkbox"/> - white water canoe <input type="checkbox"/> - surfing <input type="checkbox"/> Fishing <input type="checkbox"/> River <input type="checkbox"/> Canal <input type="checkbox"/> Lake <input type="checkbox"/> Pond <input type="checkbox"/> Ditch <input type="checkbox"/> Sewage <input type="checkbox"/> No known contact <input type="checkbox"/> Other (specify)	<input type="checkbox"/> Farmer - livestock <input type="checkbox"/> - cattle <input type="checkbox"/> - sheep <input type="checkbox"/> Dogs <input type="checkbox"/> Rats <input type="checkbox"/> Mice <input type="checkbox"/> Other animals (specify in additional info. box) <input type="checkbox"/> No known contact
			<p style="text-align: center;"><b>Type of contact</b></p> <input type="checkbox"/> Occupational <input type="checkbox"/> Recreational (specify in additional info. box) <input type="checkbox"/> Wound/abrasion <input type="checkbox"/> Immersion <input type="checkbox"/> Bite <input type="checkbox"/> Other (specify)

**Recent travel abroad**  
 Yes  No  
 If YES, please give details (when/where) in additional info. box

**Leisure activities**  
 Please specify below

Date of onset of symptoms : .....  
 Date of antibiotic treatment : .....  
 Antibiotic treatment : .....  
 .....  
 Specimen type:      Date collected:      Reference no:  
 .....  
 .....  
 .....

**Additional information :**

Previous samples sent to LRU:  Yes  No  
 LRU number and date of sample: .....  
 Requesting laboratory: .....  
 Address: .....  
 .....  
 .....  
 Contact Tel no: .....  
 Contact Doctor: ..... Date .../.../...

**LRU use only**  
 IgM ELISA  
 MAT  
 Infecting serogroup  
  
 Epidemiology      Serology  
 Requested  
 Completed  
 Lab no: