

TYPHOID FEVER

Cause: *Salmonella typhi*, the typhoid bacillus, which infects only humans. Similar paratyphoid and enteric fevers are caused by other species of *Salmonella*, which infect domestic animals as well as humans.

Transmission: Infection is transmitted by consumption of contaminated food or water. Occasionally direct faecal–oral transmission may occur. Shellfish taken from sewage-polluted beds are an important source of infection. Infection occurs through eating fruit and vegetables fertilized by night soil and eaten raw, and milk and milk products that have been contaminated by those in contact with them. Flies may transfer infection to foods, resulting in contamination that may be sufficient to cause human infection. Pollution of water sources may produce epidemics of typhoid fever, when large numbers of people use the same source of drinking-water.

Nature of the disease: A systemic disease of varying severity. Severe cases are characterized by gradual onset of fever, headache, malaise, anorexia and insomnia. Constipation is more common than diarrhoea in adults and older children. Without treatment, the disease progresses with sustained fever, bradycardia, hepatosplenomegaly, abdominal symptoms and, in some cases, pneumonia. In white-skinned patients, pink spots (papules), which fade on pressure, appear on the skin of the trunk in up to 50% of cases. In the third week, untreated cases develop additional gastrointestinal and other complications, which may prove fatal. Around 2–5% of those who contract typhoid fever become chronic carriers, as bacteria persist in the biliary tract after symptoms have resolved.

Geographical distribution: Worldwide. The disease occurs most commonly in association with poor standards of hygiene in food preparation and handling and where sanitary disposal of sewage is lacking.

Risk for travellers: Generally low risk for travellers, except in parts of north and west Africa, in south Asia and in Peru. Elsewhere, travellers are usually at risk only when exposed to low standards of hygiene with respect to food handling, control of drinking-water quality, and sewage disposal.

Prophylaxis: Vaccination

Precautions: Observe all precautions against exposure to foodborne and waterborne infections

TYPHUS FEVER

(epidemic louse-borne typhus)

Cause: *Rickettsia prowazekii*.

Transmission: The disease is transmitted by the human body louse, which becomes infected by feeding on the blood of patients with acute typhus fever. Infected lice excrete rickettsia onto the skin while feeding on a second host, who becomes infected by rubbing louse faecal matter or crushed lice into the bite wound. There is no animal reservoir.

Nature of the disease: The onset is variable but often sudden, with headache, chills, high fever, prostration, coughing and severe muscular pain. After 5–6 days, a macular skin eruption (dark spots) develops first on the upper trunk and spreads to the rest of the body but usually not to the face, palms of the hands or soles of the feet. The case-fatality rate

is up to 40% in the absence of specific treatment. Louse-borne typhus fever is the only rickettsial disease that can cause explosive epidemics.

Geographical distribution: Typhus fever occurs in colder (i.e. mountainous) regions of central and east Africa, central and south America and Asia. In recent years, most outbreaks have taken place in Burundi, Ethiopia and Rwanda. Typhus fever occurs in conditions of overcrowding and poor hygiene, such as prisons and refugee camps.

Risk for travellers: Very low for most travellers. Humanitarian relief workers may be exposed in refugee camps and other settings characterized by crowding and poor hygiene.

Prophylaxis: None.

Precautions: Cleanliness is important in preventing infestation by body lice. Insecticidal powders are available for body-lice control and treatment of clothing for those at high risk of exposure.