

Typhoid and Paratyphoid Fever

What are typhoid fever and paratyphoid fever?

Typhoid fever is caused by a bacterium called *Salmonella enterica* serotype Typhi (*S. Typhi*). Paratyphoid fever is caused by *Salmonella* Paratyphi A, B1, or C. These diseases cause a similar illness and are often grouped together and called 'enteric fever'. Most infections causing enteric fever originate from outside Australia. *S. Typhi* and *S. Paratyphi* are common in developing countries and are transmitted by contaminated food or water. Children, older people, and travellers are more likely to contract the infections.

What are the symptoms?

The main symptoms of enteric fever are fever and chills, and later abdominal pain. Less common symptoms include headache, cough, diarrhoea or constipation, and rash. Confusion, delirium and intestinal perforation may occur in severe cases. Paratyphoid infections tend to be cause milder illness. After infection with the bacteria, symptoms usually start 8 to 14 days later for typhoid fever, and 1 to 10 days later for paratyphoid fever. Some people have no symptoms.

How are typhoid and paratyphoid fever spread?

Typhoid and paratyphoid fever are spread through ingestion of contaminated food or water. The food or water would have been contaminated by the faeces or urine of an infected person, even though this person may not have symptoms. Infection is most common in places with poor sanitation.

Who is at risk of infection?

Anyone can be infected, but young children and the elderly are more susceptible. Travellers to areas where enteric fever is endemic are more likely to be exposed.

How is typhoid and paratyphoid fever diagnosed?

A diagnosis of typhoid or paratyphoid fever is usually made by laboratory testing of a blood, faeces, or urine sample.

What treatment is available?

Enteric fever is treated with antibiotics. Antibiotic treatment is also required to treat carriers. If symptoms are severe, hospitalisation may be needed.

¹ excluding *S. Paratyphi* B biovar Java, which causes gastroenteritis (salmonellosis) rather than enteric disease

Should I be at work, school or childcare?

Until at least 48 hours after all symptoms have ceased, all children and adults with typhoid or paratyphoid fever should not:

- go to work, school, preschool or childcare;
- swim in pools;
- prepare or handle food; or
- care for children, sick people, or the elderly.

In addition, two consecutive negative stool specimens are required before:

- children below primary school age can return to preschool or childcare; or
- food handlers, carers of patients, carers of children, carers of the elderly, and carers of others who are not able to maintain their own personal hygiene, can return to work or duties.

A Public Health Officer will advise if other tests are required.

If you have had close contact with someone who has typhoid or paratyphoid fever, you may also need faeces testing and to stay away from work, school or childcare while awaiting the results. A Public Health Officer will advise if this is the case.

Anyone who has had close contact with someone who has typhoid or paratyphoid fever should be aware of the symptoms and should see their general practitioner if they develop any of these symptoms.

How is it prevented?

Typhoid vaccination is recommended for all travellers two years of age and older going to endemic regions where food hygiene may be suboptimal and drinking water may not be adequately treated. Typhoid vaccines are available as either an oral tablet or intramuscular injection, or as a combination vaccine that includes hepatitis A. About 20 to 50 per cent of vaccinated people may still contract typhoid following exposure. Vaccinations should be completed at least two weeks before you travel. Protection does not last forever, so ask your doctor if you need another vaccination before you travel in the future.

There is no paratyphoid vaccine.

When travelling in developing countries, avoid consuming risky food and drinks. More specifically:

- avoid uncooked foods, including fruit unless it is able to be peeled;
- avoid untreated water, including ice;
- drink beverages only from sealed containers;
- wash hands often, especially after going to the toilet and before eating or handling food;
- if soap and water are unavailable, use an alcohol-based hand gel;
- avoid eating from street stalls; and
- Eat food that has been thoroughly cooked, is hot and steaming when presented, and is eaten while still hot.

Need more information?

For more information on typhoid or paratyphoid fever, contact your doctor or call the Health Protection Service, Communicable Disease Control Information Line during business hours on **(02) 5124 9213**.

Communicable Disease Control Section at Health Protection Service is responsible for the investigation and surveillance of notifiable or infectious conditions in the ACT in order to control or prevent their spread in the community. This includes the promotion of immunisation, education and other strategies that help to limit the spread of diseases.

Typhoid and Paratyphoid are both notifiable diseases. Cases notified to ACT Health are investigated by Public Health Officers.

Acknowledgements

- Heymann DL, 2015, *Control of Communicable Diseases Manual*, 20th edition.
- Communicable Diseases Network Australia, 2016, *Typhoid and Paratyphoid Fevers: National Guidelines for Public Health Units*, www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-typhoid-paratyphoid.htm
- Australian Technical Advisory Group on Immunisation (ATAGI), 2018. *Australian Immunisation Handbook*. www.immunisationhandbook.health.gov.au.

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