CONDITION

Typhoid fever

Typhoid fever is a serious bacterial infection usually spread through contaminated food or water.

WHAT IT IS
Bacterial infection causing fever and whole-body illness

BODY SYSTEM
Digestive system and whole body

MAIN SYMPTOMS
Persistent fever, headache, weakness, abdominal pain

WHAT CAUSES IT
Infection with Salmonella Typhi bacteria

HOW IT IS DIAGNOSED
Blood cultures, sometimes stool or bone marrow cultures

MAIN TREATMENT
Antibiotics, fluids, and supportive care

CAN IT BE CURED?
Yes - antibiotics usually clear the infection

IS IT AN EMERGENCY?
Sometimes - confusion, collapse, or severe abdominal pain

LONG-TERM OUTLOOK
Most recover fully; some become long-term carriers

Overview

Typhoid fever is an infection caused by the bacterium Salmonella enterica serotype Typhi, usually shortened to Salmonella Typhi or S. Typhi . It can cause a prolonged fever and affect the digestive system and other parts of the body.

The bacteria spread when food or water becomes contaminated with stool from someone who has the infection or carries the bacteria. This is called fecal-oral transmission. Typhoid is more common where sanitation and access to safe water are limited.

Typhoid is different from the more familiar Salmonella infections linked to short-lived food poisoning. It can become serious without effective antibiotic treatment. Complications can include intestinal bleeding, a hole in the bowel, confusion, and severe problems with blood circulation.

Typhoid fever and paratyphoid fever are sometimes grouped under the term "enteric fever." Paratyphoid is caused by related Salmonella Paratyphi bacteria. The conditions can look similar, but current typhoid vaccines do not protect against paratyphoid.

Symptoms

Symptoms usually begin gradually after the bacteria enter the body. The time between infection and illness can range from several days to several weeks.

A persistent fever is the main feature. It may rise over several days rather than starting suddenly. Other possible symptoms include:

Some people become very unwell, while others have less obvious symptoms. Children may have diarrhea more often than adults, but symptoms alone cannot confirm typhoid.

Symptoms may resemble malaria, dengue, influenza, COVID-19, or other infections associated with travel. Testing is important because these conditions need different care.

- Headache, tiredness, and general weakness
- Abdominal pain, nausea, or loss of appetite
- Constipation or diarrhea
- Muscle aches or a dry cough
- A faint rash of flat, pink spots, although this is not always present

Causes and risk factors

Typhoid fever is caused only by S. Typhi . Humans are its natural reservoir, meaning the bacteria do not normally circulate in animals.

An infected person can release the bacteria in their stool. If handwashing, sanitation, or water treatment is inadequate, the bacteria can reach food or drinking water. A person may also spread the bacteria while preparing food.

Your chance of exposure is higher if you:

A small number of people continue to carry and release S. Typhi after they feel well. This is called chronic carriage. These people may unknowingly contaminate food if careful hygiene is not maintained.

Typhoid does not usually spread through casual contact such as sitting near someone. The bacteria must reach the mouth, usually through contaminated hands, food, or water.

- Live in or visit an area where typhoid is common
- Drink untreated water or eat food prepared with unsafe water
- Stay with local communities where sanitation is limited
- Have close contact with someone carrying the bacteria
- Have reduced stomach acid, which normally helps kill swallowed bacteria

Diagnosis

A healthcare professional may suspect typhoid if you have a persistent fever and have recently been in an area where the infection occurs. They will ask about travel, food and water exposure, vaccination, symptoms, and any antibiotics like amoxicillin or doxycycline already taken.

A blood culture is the usual test used to confirm the infection. A sample of blood is placed in conditions that allow bacteria to grow. More than one sample may be needed because S. Typhi is not always present in every blood sample.

Cultures should ideally be collected before antibiotics begin, but treatment may need to start sooner if you are unwell. The laboratory can test cultured bacteria to see which antibiotics are likely to work. This is called antibiotic susceptibility testing.

Stool cultures may help, particularly later in the illness or when checking whether someone is still carrying the bacteria. Bone marrow culture can detect some infections missed by blood culture, but it is invasive and rarely needed.

Antibody blood tests, including the Widal test, are not reliable enough to confirm a current infection on their own. They can give positive results in people without typhoid and negative results in people who do have it.

Treatment and management

Typhoid fever is treated with antibiotics. Early, effective treatment lowers the risk of serious complications and usually shortens the illness.

The antibiotic chosen is influenced by where the infection was probably acquired and the results of culture and susceptibility testing. This matters because S. Typhi has become resistant to many antibiotics. Some strains are resistant to several older medicines, and extensively drug-resistant strains have also emerged.

Treatment may begin before culture results are available. It can then be changed if laboratory testing shows that another antibiotic is more suitable. More severe illness may require antibiotics through a vein in hospital.

Supportive care helps your body recover. This may include fluids, treatment for dehydration, nutrition, rest, and monitoring for complications. Severe intestinal bleeding or a hole in the bowel may require surgery.

Take the full antibiotic course exactly as directed, even if you feel better sooner. Stopping early can allow the infection to return or contribute to antibiotic resistance. Do not use leftover antibiotics or medicines bought without appropriate medical advice.

Fever may take several days to settle after effective treatment starts. Contact the treating service if symptoms are worsening or not beginning to improve, as further testing or a treatment change may be needed.

Public health teams may contact you because typhoid can spread to other people. Follow-up stool tests may be required, especially if you handle food or work with young children, older adults, or people with weakened immune systems. Local rules about returning to work or school differ.

Complications

Complications are more likely when treatment is delayed or the bacteria do not respond to the first antibiotic.

Intestinal bleeding can cause blood in the stool, black stool, weakness, or faintness. An intestinal perforation is a hole in the bowel wall. It can cause sudden or worsening abdominal pain, swelling, a rigid abdomen, and a serious infection inside the abdomen.

Other possible complications include:

Relapse means symptoms return after treatment, usually because some bacteria remain in the body. A new fever after recovery needs medical assessment and repeat testing.

Some people become long-term carriers without ongoing symptoms. Further testing and treatment may be offered because carriers can continue to spread the bacteria.

- Severe dehydration or problems with blood circulation
- Confusion, unusual drowsiness, or reduced awareness
- Inflammation affecting the brain, heart, liver, or other organs
- Infection spreading to bones, joints, or other tissues

- Relapse after an apparent recovery

Prevention

Typhoid cannot always be prevented, but vaccination, safe water, sanitation, and careful food hygiene reduce the risk.

Typhoid vaccines are available for people living in some affected areas and for certain travelers. Different countries use different vaccines, including typhoid conjugate vaccines, injectable polysaccharide vaccines, and oral live vaccines. Protection is not complete, and it can decrease over time. Follow the vaccination advice for your destination and circumstances.

When safe water cannot be assured:

Alcohol-based hand sanitizer is useful when soap and water are unavailable, but it does not replace safe food, water, and sanitation.

If you have typhoid, careful handwashing after using the toilet is essential. Do not prepare food for other people until you have been told it is safe. Follow any testing or work restrictions given by the local public health service.

- Drink sealed bottled water or water that has been properly boiled or treated
- Avoid ice unless it was made with safe water
- Eat food that is thoroughly cooked and still hot
- Peel fruit yourself and avoid raw foods washed in unsafe water
- Wash your hands with soap after using the toilet and before eating

Living with it and what to expect

With effective antibiotics and supportive care, most people recover fully. Fever and weakness may continue for a few days after treatment begins, and tiredness can last longer than the fever. Recovery speed is not the same for everyone.

Drink enough fluid and return to normal activities gradually. If eating is difficult, smaller meals may be easier. Follow any advice given after dehydration, intestinal bleeding, or surgery.

Symptoms can occasionally return after an apparent recovery. Seek medical review if fever, abdominal pain, diarrhea, or marked weakness comes back. A repeat culture may be needed.

You may also need follow-up tests to check that the bacteria are no longer present in your stool. This is especially important for people whose work involves food preparation or close

contact with people at greater risk from infection.

Long-term health problems are not expected for most people after the infection has cleared. However, recovery may take longer after severe illness or complications. Chronic carriers may feel well but need additional assessment and treatment to reduce the chance of passing the bacteria to others.

When to get medical help

Seek prompt medical advice if you develop a persistent fever during travel or after returning from an area where typhoid occurs. Mention where you traveled, when you returned, what you ate and drank, and whether you received a typhoid vaccine.

Arrange medical review if:

Get emergency help for:

These symptoms can suggest intestinal bleeding, bowel perforation, severe dehydration, or another serious complication.

- Fever or other symptoms are not improving after treatment starts
- Symptoms return after you seemed to recover
- You cannot keep fluids down or have signs of dehydration
- A close contact has confirmed typhoid and you become unwell
- You have been asked to complete follow-up cultures
- Sudden, severe, or rapidly worsening abdominal pain
- A swollen or rigid abdomen
- Black stool, substantial rectal bleeding, or vomiting blood
- Confusion, extreme drowsiness, collapse, or difficulty waking
- Fainting, severe weakness, breathing difficulty, or very little urine

Common questions

Can typhoid fever go away without antibiotics?

Symptoms may sometimes lessen without treatment, but untreated typhoid can worsen, cause serious complications, or lead to long-term carriage. Suspected typhoid needs prompt medical assessment and usually antibiotic treatment.

Can I catch typhoid from another person?

Yes, but it is usually spread when bacteria from an infected person's stool contaminate hands, food, or water. Careful handwashing and avoiding food preparation while infectious reduce the risk.

How long is someone with typhoid contagious?

The bacteria can be released in stool during the illness and for a period after recovery. Some people carry them for much longer. Follow-up stool cultures may be used to determine whether carriage continues.

Does the typhoid vaccine give complete protection?

No. Vaccination lowers the risk but does not prevent every infection. It also does not protect against paratyphoid. Safe food and water precautions remain important after vaccination.

Can typhoid fever come back after treatment?

Yes. A relapse can occur after symptoms have cleared. A returning fever or abdominal symptoms should be assessed rather than treated with leftover antibiotics.

Is typhoid the same as ordinary Salmonella food poisoning?

No. Typhoid is caused by S. Typhi and can spread throughout the body. Most ordinary foodborne Salmonella infections are caused by other strains and mainly cause short-term diarrhea and stomach cramps.

Sources

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