

# TYPHOID NEEDS ATTENTION

- **4-5M** annual cases of typhoid are reported globally<sup>[1]</sup>
- **Without proper treatment**, typhoid could be fatal in up to 30% of cases<sup>[3]</sup>
- **Typhoid symptoms** typically appear after an incubation period of 7 to 14 days following infection.<sup>[2]</sup>



**Typhoid** is an acute generalised infection caused by the enteric bacterium *Salmonella typhi*. After an incubation period of 7 to 14 days, infected individuals develop symptoms of varying severity, marked by persistent high fever, abdominal discomfort, malaise and headache.<sup>[4]</sup>

Without preventive measures and prompt treatment, typhoid can be life-threatening.

## Why is it a Growing Health Concern?

Antimicrobial resistance (AMR) is making typhoid treatment increasingly difficult. In recent years, the emergence of extensively drug-resistant (XDR) typhoid (resistant to first-line antibiotics like ampicillin, chloramphenicol, and even third generation cephalosporins) has complicated treatment.<sup>[4]</sup>

Systemic infection can affect vital organs beyond the intestines. If untreated, it may lead to internal bleeding or perforation.<sup>[5]</sup>

Typhoid is contagious and spreads rapidly through contaminated food and water. In areas with poor sanitation, outbreaks can escalate, causing a significant public health concern.<sup>[6]</sup>

## Some Symptoms of Typhoid Fever<sup>[5]</sup>



Progressively increasing high fever



Headache



Chills



Weakness or fatigue



Stomach ache



Excessive sweating



Loss of appetite



Cough



Diarrhoea or constipation



Muscle aches



Nausea and vomiting



Rashes or spots (typically on the chest or stomach, more visible in fair skin)

## Diagnosis and Laboratory Guidance<sup>[6]</sup>

Blood culture is the most reliable method for typhoid diagnosis. It has a 90% detection rate in the first week, and confirming a negative result can take up to five days.

Bone marrow culture provides highest accuracy but it is an invasive process.

Widal tests are the most common in India, but has low sensitivity and specificity, leading to potential false positives like malaria.

### Resources

<sup>[1]</sup> <https://immunizationdata.who.int/global/wise-detail-page/typhoid-reported-cases-and-incidence?CODE=Global&YEAR=>

<sup>[2]</sup> <https://www.nhs.uk/conditions/typhoid-fever/symptoms/>

<sup>[3]</sup> <https://acvip.org/parents/columns/typhoid.php>

<sup>[4]</sup> <https://www.ncbi.nlm.nih.gov/books/NBK557513/>

<sup>[5]</sup> <https://www.mayoclinic.org/diseases-conditions/typhoid-fever/symptoms-causes/syc-20378661>

<sup>[6]</sup> <https://pmc.ncbi.nlm.nih.gov/articles/PMC10236512/>

<sup>[7]</sup> <https://iapindia.org/pdf/Ch-008-Enteric-Fever.pdf>

Visit [www.typhoidneedsattention.com](http://www.typhoidneedsattention.com) to know more.



## Preventing Typhoid<sup>[1]</sup>



Following WASH (water, sanitation and hygiene) protocol



Practising safe eating habits



Vaccination for long-term protection

India currently uses **two** types of injectable typhoid vaccines:<sup>[2,3]</sup>

### Typhoid Conjugate Vaccine (TCV)

### Vi Polysaccharide (Vi-PS) Vaccine

Type of vaccine	Age of administration	Protection	Key features
TCV*	6 months and older <sup>[3]</sup>	At least 7 years <sup>[1]</sup>	Immune memory, co-administered with MMR at 9 months or later <sup>[2]</sup>
Vi-PS	2 years and older <sup>[1]</sup>	2 to 3 years at most <sup>[1]</sup>	No immune memory, cannot be co-administered with MMR <sup>[1,2]</sup>

\*Data for the above table has been taken from studies conducted on Typhar-TCV. Data is not available for other TCV vaccines yet.

## Antimicrobial Resistance<sup>[1,2,5]</sup>

Antimicrobial resistance (AMR) of *Salmonella typhi* is a growing concern in India. Vaccines reduce the need for antibiotics and help combat AMR, lowering the burden of typhoid.

Vaccines also build herd immunity and thus play a crucial role in public health.

ICMR and IAP recommend incorporating TCV into the national immunisation program as an effective tool to prevent typhoid fever.

## Advantages of TCV:<sup>[2]</sup>



Superior efficacy and effectiveness



Longer duration of protection



Immunogenicity among infants



Good herd immunity



Triggers immune memory

## FAQ

## Frequently Asked Questions

### 1. Can typhoid fever cause long-term health problems?

If left untreated, typhoid fever can cause serious health complications, including intestinal bleeding or perforation. In severe cases, it can also affect other organs, including the brain.<sup>[6,7]</sup>

### 2. What are the common treatments for typhoid?

Antibiotics are the most common treatment for typhoid, and most people require a full course of 10 to 14 days. Symptoms show improvement within 6 to 7.<sup>[8]</sup>

### 3. How long does it take to recover from typhoid?

It can take up to 10 days to feel better, and it might take even longer for the fatigue and weakness to subside. If the fever relapses then recovery can take longer.<sup>[9]</sup>

### 4. How long does typhoid vaccine protection last?

Different vaccines have different protection capabilities. According to the WHO, TCV is preferred at all ages and gives protection for at least 7 years.<sup>[2]</sup>

### 5. Are there any side effects of the typhoid vaccine?

While there are no serious side effects of the vaccine, some people experience a fever, pain and swelling at the site of the injection.<sup>[4]</sup>

#### Resources

<sup>[1]</sup> <https://www.ncbi.nlm.nih.gov/books/NBK557513/>

<sup>[2]</sup> Purple Book: IAP Guidebook on Immunization 2022 By Advisory Committee on Vaccines and Immunization Practices (ACVIP)

<sup>[3]</sup> <https://iris.who.int/bitstream/handle/10665/345367/WHO-IVB-2021.04-eng.pdf>

<sup>[4]</sup> <https://pmc.ncbi.nlm.nih.gov/articles/PMC10266125/>

<sup>[5]</sup> [https://www.icmr.gov.in/icmrobject/custom\\_data/pdf/annual-reports/ICMR\\_AR\\_English\\_2021\\_22\\_1.pdf](https://www.icmr.gov.in/icmrobject/custom_data/pdf/annual-reports/ICMR_AR_English_2021_22_1.pdf)

<sup>[6]</sup> <https://www.nhs.uk/conditions/typhoid-fever/complications/>

<sup>[7]</sup> <https://www.mayoclinic.org/diseases-conditions/typhoid-fever/symptoms-causes/syc-20378661>

<sup>[8]</sup> <https://www.nhs.uk/conditions/typhoid-fever/treatment/>

<sup>[9]</sup> <https://my.clevelandclinic.org/health/diseases/17730-typhoid-fever>

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