

Indian Academy of Pediatrics (IAP)



GUIDELINES FOR PARENTS

Tuberculosis in Children

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14 FAQs on TUBERCULOSIS IN CHILDREN

1. When should one suspect tuberculosis (TB) in a child?
2. Are all patients with TB disease infectious? Does everyone who gets exposed to someone with TB gets infected? How tuberculosis gets transmitted?
3. My child has developed fever and other symptoms. I am worried as I learnt that one of her mates in the school has been coughing and then diagnosed to have TB. How do we know whether or not she has TB?
4. Is TB curable? How it is treated and how many months of treatment is required for complete cure? My child is on regular antitubercular therapy but still has fever and other symptoms. Her doctor says it takes some time but I am worried.
5. I am giving my child medicines regularly but he gets nauseated at the sight of the drugs and often vomits some or all of the medicine. Some days I just give some of the pills to him. Is this acceptable?
- 6A. My daughter was passing orange-colored urine since the time she started her treatment. I thought this was because anti-TB drugs produce a lot of heat in the body.
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7. What special diet should I give for my child with TB so that he can fight the disease. He has missed school for a long time. When can I send him back to school? We have separated his utensils and do not allow him to share food too. However, he shares the bed with his sibling. What should we do?
8. My child's doctor had advised stoppage of therapy after 6 months. I am worried as he has again started running fever 2–3 months after stopping therapy. I got his tests repeated and am worried that his tuberculin skin test (Mantoux test) is still positive.
9. My baby has developed TB and after testing I have been told she has a different and more difficult to treat disease known as multidrug-resistant (MDR) TB. What is this? Why did she get this illness? How is it different?
10. My son was tested for TB as he had ill health and had been living with his grandfather who was on treatment for lung TB. All his tests including the chest X-ray were normal except for TB skin test/Mantoux test, which came out to be positive. His doctor says that he does not have TB and gave him some treatment which actually made him better. However, I am worried. I was told that positive skin test means my son is infected by TB bacteria but has as yet not developed the disease. Does my child need any treatment for TB?
11. I got my child vaccinated at birth with Bacillus Calmette–Guérin (BCG) vaccine and I was informed that BCG vaccine is given to prevent TB infection in the child. Then why has my child contracted TB even after being vaccinated?
12. My son was diagnosed with TB and is on regular anti-TB treatment (ATT) for 1 month. At the time of diagnosis, I was informed that he has TB of lungs. Recently, I heard that one of my colleagues had TB in her brain. I am worried for my son and wanted to know whether TB can spread from his lungs to any other body part?
13. My son was diagnosed with TB and is taking his treatment as advised by the doctor. How frequently do I need to visit the hospital to get him checked by the doctor?
14. My 1-year-old child was diagnosed with TB. Will there be any long-term complications of TB on my child's growth and development? Should I continue her routine immunization during this time?

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Tuberculosis in Children

Q1

When should one suspect tuberculosis (TB) in a child?

- Any child with the following symptoms is suspected to have TB:
 - Fever or cough lasting >2 weeks, or
 - Who has lost 5% or more weight during the last 3 months or has not gained weight during the last 3 months, or
 - Is withdrawn and lethargic, or
 - Loss of appetite, or
 - Has painless large swellings in the neck, axilla, or inguinal area, or over chest could be suffering from TB, or
- Often the cough is productive and occasionally in older children, it may be blood-tinged.
- If the child has history of confusion, nausea, vomiting, lethargy, irritability, and gradual and progressive deterioration in school performance and sudden unconsciousness, it may suggest brain TB (Neuro-TB).
- History of back pain or stiffness and swelling at back or lower-extremity paralysis for prolonged periods may be suggestive of "bone and spine TB".
- Prolonged symptoms in any individual exposed to another case with pulmonary (respiratory) TB increase the likelihood of disease.
- Since these symptoms can be caused many other diseases too, therefore, one needs a professional opinion for confirmation.

Q2

**Are all patients with TB disease infectious?
Does everyone who gets exposed to
someone with TB gets infected? How
tuberculosis gets transmitted?**

No! Neither is everyone suffering from TB infectious nor does everyone exposed to a TB patient gets infected or diseased. Though contact or exposure to a source case with TB is the most common way of transmission but some contacts may be lucky to escape it without disease with mere infection or may even escape it totally. Remember that everyone may not be so lucky! TB in humans is largely due to spread of (bacteria) infection from those suffering from TB.

Transfer of infection requires involvement of lung. Risk is highest when the source cases have significant cough. As the disease transmission is airborne, cough hygiene of the source case, duration, and closeness to the source are important factors affecting the chances of spread. The contacts at household level or school or workplace (or wherever there is a risk of prolonged exposure) have several times higher risk of contracting infection from the source case. Any sick child who has been in contact of a patient with TB at school, home, or neighborhood has a higher chance of having TB.

There are skin and blood tests available to check whether an exposed person has contracted infection and also there are drugs available to prevent development of disease among those infected. Similarly, a symptomatic contact can be tested for presence of the disease.

Q3

My child has developed fever and other symptoms. I am worried as I learnt that one of her mates in the school has been coughing and then diagnosed to have TB. How do we know whether or not she has TB?

Any child who has TB-like symptoms; or, is reporting general ill health after being exposed to a TB case needs to be investigated for TB disease. X-ray of the chest is one of the initial screening tests. If X-ray is abnormal, further testing is done on sputum. When a small child is not able to cough-up sputum, doctors may give him some medications to induce and collect it (induced sputum test) or may collect the swallowed sputum from the stomach after passing a tube through the nose or mouth after a period of fasting (overnight or 4–6 hours fasting). Sometimes the tests for TB are run on the pus or fluid taken out from the covering of the lung (pleural fluid) or from any other swelling over the body.

Establishing the diagnosis of TB in a child requires skills and expertise, and therefore one should not attempt it by self-ordering of tests. TB treatment is required, if only the diagnosis is established.

Q4

Is TB curable? How it is treated and how many months of treatment is required for complete cure? My child is on regular antitubercular therapy but still has fever and other symptoms. Her doctor says it takes some time but I am worried.

Tuberculosis can be successfully treated in most cases. Treatment of TB is possible and freely available in the country at public health facilities. The most common form of TB is that it can be treated by oral drugs given for a minimum of 6 months. There is a slight change in therapy after initial 2 months as one of the four drugs used initially is withdrawn. If the patient has TB of bone or brain, then one needs to take treatment for at least 12 months.

It usually takes few days to about 4 weeks for the patient to feel better with treatment. However, the treatment must be taken even after the symptoms abate as it takes several months of treatment for disease to be cured. Adherence to treatment and completion of the course are very important determinants of achieving lasting cure.

Q5

I am giving my child medicines regularly but he gets nauseated at the sight of the drugs and often vomits some or all of the medicine. Some days I just give some of the pills to him. Is this acceptable?

It is not unusual for some children to be averse to smell or taste of medications. However, TB is a serious illness and prompt and complete medication is mandatory. You can try to mask the taste or sight of drug by mixing it with any sugary syrup or in a teaspoon of jam. Most TB drugs are available as flavored dispersible tablets which can be easily dissolved in water and given to children. Withholding one or more drugs without advice as well as repeated vomiting out of the drugs is fraught with risks of poor response as well as developing drug resistance. It is not acceptable to give part of the prescribed drugs, even for a single day. In case your child is vomiting regularly or frequently, you must see your doctor or treatment provider for review.

Q6A

My daughter was passing orange-colored urine since the time she started her treatment. I thought this was because anti-TB drugs produce a lot of heat in the body.

Rifampicin is an orange red-colored medication often used for treating TB. It has a tendency to color the urine as well as sweat. This is harmless pigmentation of urine and should not be any cause for concern.

Q6B

Now, after 3 weeks, she is having vomiting and loss of appetite. I think her eyes are also showing yellow color. What should I do?

Tuberculosis drugs can sometimes not be tolerated and the child develops liver injury which is marked by loss of appetite, nausea, vomiting, and sometimes jaundice (found by yellowish discoloration of the eyes). This will require a change in treatment. Your doctor may run some blood tests to establish drug-induced liver injury, and then modify the treatment. Most children are able to tolerate these drugs on systematic reintroduction under expert care. Do not stop or start drugs on your own, and, do not delay contacting your doctor in such a situation.

Q7

What special diet should I give for my child with TB so that he can fight the disease. He has missed school for a long time. When can I send him back to school? We have separated his utensils and do not allow him to share food too. However, he shares the bed with his sibling. What should we do?

It is advisable to give locally available nutrient rich or fortified supplementary food to the child. If the child has lost weight and not regaining it back in 2 months, it is better to get expert help to find the cause and remedy.

A sick or coughing child should not be sent to school to help him/her recuperate as well to break the chain of transmission. Infection control practices such as using a facemask or covering the face while coughing or sneezing are important. Sputum should be disposed properly using hot boiling water. Avoid going to crowded and closed spaces at least till the symptom persists (it usually takes a month of successful therapy) to decrease the risk of spreading the disease to the exposed contacts.

Do not cause stigma by totally isolating the patient. Sharing of food or utensil does not increase the risk of transmission. Do not ever blame or rebuke the child, and patiently educate them about age-appropriate infection control measures. Sharing of bed, as far as feasible, should be avoided during symptomatic phase.

Q8

My child's doctor had advised stoppage of therapy after 6 months. I am worried as he has again started running fever 2-3 months after stopping therapy. I got his tests repeated and am worried that his tuberculin skin test (Mantoux test) is still positive.

Six months of therapy is usually, except for bone and brain TB or drug-resistant cases. Risk of recurrence of disease is low, if the initial treatment was correctly provided. Recurrence risk is maximum within a year of stopping therapy but can occur later also.

Recurrence or persistence of symptoms should alert us to the possibility of continued TB disease despite therapy. But, these symptoms can also be due to other reasons too. Establishing recurrence shall require detailed investigations and testing for any drug resistance too.

Importantly, TB skin test can remain positive even after successful therapy and carries no significance once the treatment has been given. Like-wise, there can be some residual shadows in the chest X-ray too despite successful treatment (akin to a scar left after a wound heals). An expert opinion and testing is required to interpret these shadows as healed or active or another illness, if your patient is having recurrence of symptoms.

Q9

My baby has developed TB and after testing I have been told she has a different and more difficult to treat disease known as multidrug-resistant (MDR) TB. What is this? Why did my baby get this illness? How is it different?

Multidrug-resistant TB refers to presence of resistance to rifampicin along with other drugs. This can only be confirmed by testing for resistance in the bacteria from body secretion or specimen such as sputum, pus, body fluids, etc. Drug-resistant disease develops due to poor therapy, poor adherence to therapy in the patient or the source case. If the source case has required repeated courses of treatment or is on a very prolonged therapy or has died due to TB, there is a high chance that the source case has had drug-resistant TB. Not uncommonly, the source case may not be known.

Treatment for drug-resistant TB is different, prolonged, and the response to therapy can take longer.

Q10

My son was tested for TB as he had ill health and had been living with his grandfather who was on treatment for lung TB. All his tests including the chest X-ray were normal except for TB skin test/Mantoux test, which came out to be positive. His doctor says that he does not have TB and gave him some treatment which actually made him better. However, I am worried. I was told that positive skin test means my son is infected by TB bacteria but has as yet not developed the disease. Does my child need any treatment for TB?

Remember that TB infection does not necessarily mean that there is TB disease too. Not everyone getting infected shall develop the disease.

Presence of symptoms suggestive of TB in an exposed individual will prompt further testing.

In case your child has only got evidence of TB infection (based on a positive skin test/Mantoux test), then (s)he needs treatment for TB infection.

A close contact-like those sharing household with the source case should be screened for presence of TB symptoms. If there are no other TB symptoms or disease apart from positive skin test, such an exposed individual is deemed infected and given benefit of TB preventive therapy or in other words treatment for TB infection.

Tuberculosis preventive therapy usually comprises a single drug [isoniazid, also known as isonicotinic acid hydrazide (INH)] given once a day for 6 months. This helps in significantly decreasing the risk of transformation from infection to the disease. It is usually safe and well-tolerated. In future, some more therapies for TB prevention may be approved by the government.

Q11

I got my child vaccinated at birth with Bacillus Calmette–Guérin (BCG) vaccine and I was informed that BCG vaccine is given to prevent TB infection in the child. Then why has my child contracted TB even after being vaccinated?

BCG vaccine is given to the child at birth as it enables satisfactory, but not absolute, protection against severe forms of TB (miliary TB, tubercular meningitis). But, it has low protective efficacy against pulmonary TB, i.e., the TB of lungs, so the child can still get infected with pulmonary TB even after getting the BCG vaccine at birth.

Q12

My son was diagnosed with TB and is on regular anti-TB treatment (ATT) for 1 month. At the time of diagnosis, I was informed that he has TB of lungs. Recently, I heard that one of my colleagues had TB in her brain. I am worried for my son and wanted to know whether TB can spread from his lungs to any other body part?

Tuberculosis is a curable disease and if you follow the proper treatment guidelines as advised by the doctor, the disease has a high chance of being cured. However, if you do not adhere to the treatment protocol or do not complete the course of treatment, or there is unrecognized drug resistance, then there are chances that the TB bacteria can spread from lungs to other parts of the body such as lymph nodes, brain, bones, etc. through the route of lymph and blood. Very rarely, the disease can spread despite standard therapy due to certain host or agent factors.

Q13

My son was diagnosed with TB and is taking his treatment as advised by the doctor. How frequently do I need to visit the hospital to get him checked by the doctor?

Usually, your doctor may like to see you after 2 weeks of starting treatment to see all is going well and then at 2 months of therapy as that is the time for repeat assessment and change of treatment from four drugs to three drugs. Thereafter, you may see your doctor every 2 months or so till he decides to stop treatment. Apart from this, you may need to consult the doctor if the symptoms do not get better, or get worse after starting the treatment; or there is appearance of new symptoms or adverse effects such as nausea, vomiting, anorexia, joint swelling, visual disturbances, etc. You need to complete the course of the medicines for the duration of time as advised by the doctor and then stay in follow-up with the doctor every 3–6 months for about an year.

Q14

My 1-year-old child was diagnosed with TB. Will there be any long-term complications of TB on my child's growth and development? Should I continue her routine immunization during this time?

Tuberculosis can affect your child's growth and development. But, providing proper diet to the child with TB treatment can look after this growth faltering. Most children with TB regain their lost weight by 4 weeks of treatment.

The routine immunization of the child should not be interrupted, though may be deferred during acute febrile phase. Immunization to children on anti-TB treatment does not usually add any additional risks.