

## Guideline for Evaluation & Treatment of Pediatric Latent Tuberculosis Infection

### What is latent tuberculosis infection (LTBI)?

LTBI is defined as infection with *Mycobacterium tuberculosis* (TB) without evidence of active TB disease. A person with LTBI has a positive tuberculin skin test (TST) or positive interferon-gamma release assay (IGRA), such as QuantiFERON (QFT), without signs/symptoms or physical exam findings of active TB and without evidence of active TB on chest radiograph.

### Who should be tested for LTBI (see California Tuberculosis Risk Assessment for Pediatrics – link below)?

TB risk assessment should be performed initially at approximately 6-12 months of age and annually thereafter. Only those children with a new risk factor should undergo TB testing. TB risk assessment questions include:

- Birth, travel, or residence in a country with an elevated TB rate for at least 1 month (any country other than US, Canada, Australia, New Zealand, or a country in western or northern Europe)?
- Immunosuppression (current or planned)?
- Close contact to someone with infectious TB disease?

### Which TB test should be performed when a new TB risk factor is identified?

Age	Type of TB Test
<2 years of age	<b>Preferred:</b> TST (consider QFT or other IGRA only after consultation with Pediatric ID)
≥2 years of age	<b>Preferred:</b> QFT or other IGRA (advantages: 1 visit, less variability, unaffected by prior BCG) <b>Acceptable:</b> TST (if patient is not BCG-vaccinated or if QFT/other IGRA not available or repeatedly indeterminate)

#### Testing Tips:

- Perform TB test prior to any planned immunosuppression (e.g., prolonged systemic steroids, TNF-alpha antagonists, organ transplant, etc.).
- When increased sensitivity for diagnosing LTBI is sought (e.g., in very high-risk patients), TST and QFT (or other IGRA) can be done *simultaneously*, with a positive result from either being diagnostic.

### What is considered a “positive” TB test?

TST Result	Interpretation (depends on risk factors)
≥ 5 mm	Positive if: Contact with active case of infectious TB Abnormal CXR or exam consistent with TB Immunocompromised (HIV, steroids, etc.)
≥ 10 mm	Positive for: All other persons in California
QFT Result	Interpretation
≥0.35 IU/mL	Positive: TB infection likely
<0.35 IU/mL	Negative: TB infection unlikely
Indeterminate	Test failure Consider repeating test

### What is the appropriate evaluation if the TB test is “positive”?

Evaluate patient for active TB disease with:

- Review of systems
- Physical examination
- Chest radiograph (2 views)

If there is concern about active TB, do **not** start TB medications and consult Pediatric ID.

Proceed to treatment for LTBI only after active TB is ruled out.

## What is the treatment for LTBI?

Preferred (due to higher completion rates): rifampin 10-20 mg/kg PO once daily for 4 months

Weight		Rifampin		
Kilograms	Pounds	150 mg capsule	300 mg capsule	Total milligrams
4-7.5	9-16.5	½ (approximate)		75 mg
7.5-15	16.5-33	1		150 mg
15-25	33-55		1	300 mg
25-35	55-77	3		450 mg
Over 35	Over 77		2	600 mg

- Assess for drug interactions (e.g., contraceptives).
- Forewarn patients of orange discoloration of body fluids (including urine, feces, saliva, sweat, and tears).
- Patients should remove soft contact lenses as permanent staining may occur.
- If a liquid suspension is required, an extemporaneous formulation of rifampin of 10 mg/mL can be made by pharmacies. Mix well before each dose.

Acceptable (lower cost if uninsured): isoniazid 10-15 mg/kg PO once daily for 9 months

Weight		Isoniazid		
Kilograms	Pounds	100 mg tab	300 mg tab	Total milligrams
3-5	6.6-11	½		50 mg
5-7.5	11-16.4	¾ (approximate)		75 mg
7.5-10	16.5-22	1		100 mg
10-15	22-33		½	150 mg
15-20	33-44	2		200 mg
Over 20	Over 44		1	300 mg

- Tablets are preferred because INH liquid suspension commonly causes GI distress due to sorbitol content. However, for young infants, INH liquid suspension (50 mg/5 mL) can be considered.
- Consider vitamin B6 (pyridoxine) supplementation for breastfed infants, children/adolescents with milk- and meat-deficient diets, HIV-positive patients, and patients with INH-associated paresthesia. Once daily dosing:
  - Infant: 6.25 mg (¼ of 25 mg tablet)
  - Toddler: 12.5 mg (½ of 25 mg tablet)
  - School-aged child: 25 mg tablet

Acceptable (for children ≥2 years): isoniazid/rifapentine PO once weekly for 12 weeks (consider only after consultation with Pediatric ID)

### Treatment Tips:

- For those unable to swallow pills or capsules, pills may be crushed or capsules may be opened. Powder or fragments should be mixed or layered in a small amount of thick, sweet vehicle (e.g., fruit sauce, chocolate pudding, or Nutella).
- Dispense 1-month supply (=30 days) at a time.

## What monitoring is recommended during LTBI treatment?

Perform monthly clinic evaluations:

- Check weight and provide monthly refills adjusted for current weight
- Assess medication adherence
- Monitor for signs/symptoms of TB disease
- Monitor for medication toxicity (obtain LFTs only if additional risk factors for hepatotoxicity or signs/symptoms of hepatotoxicity)

Perform end-of-treatment clinic evaluation:

- Verify completion of treatment:
  - Rifampin: 4 months (120 doses) of rifampin within a 6-month period
  - Isoniazid: 9 months (270 doses) of isoniazid within a 12-month period (6 months within a 9-month period is sufficient)
- Provide anticipatory guidance:
  - Inform patient to avoid future TB testing (repeat TST/IGRA will likely remain positive and provides no new information)
  - Educate about signs/symptoms of TB disease and need for regular symptom reviews (CXR needed only if concerning signs/symptoms develop)
- Provide written documentation of treatment completion (see Latent TB Infection Evaluation/Treatment Record)

## References

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- California Pediatric TB Risk Assessment: <https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/TBCB-CA-Pediatric-TB-Risk-Assessment.pdf>