

**PRACTICE GUIDANCE FOR THE
DIAGNOSIS AND TREATMENT OF LATENT TUBERCULOSIS INFECTION**

(An educational tool from the Washington State Tuberculosis Advisory Council)

Primary Care Providers are encouraged to play an active role in this effort toward Tuberculosis Elimination

Supported by the American Lung Association of Washington and the Firland Foundation.

Funding for dissemination provided by a grant from the Washington Health Foundation.

BASIC PRINCIPLES ABOUT LATENT TUBERCULOSIS INFECTION:

1. Latent tuberculosis infection (LTBI) means that a person is infected with *Mycobacterium tuberculosis* (the germ that causes tuberculosis) **BUT** is not clinically ill and has no evidence of active tuberculosis disease (TB).
2. LTBI is common—estimated to affect up to 10% of the Washington State population.
3. Persons with LTBI are at risk for developing active TB—10% lifetime risk, much higher if immunocompromised.
4. LTBI can be diagnosed using the Tuberculin Skin Test (TST), or by using a blood test called the Quantiferon® test.
5. LTBI testing should be targeted to persons at high risk for having LTBI and/or for developing TB (see below).
6. Treatment of LTBI can help to prevent active TB and prevent the transmission of TB to others.
7. Patient education and simple clinical monitoring can prevent serious complications of treatment of LTBI.

WHO SHOULD BE TESTED FOR LTBI? ANYONE MEETING ONE OR MORE OF THESE CRITERIA:

Those at high risk for having LTBI

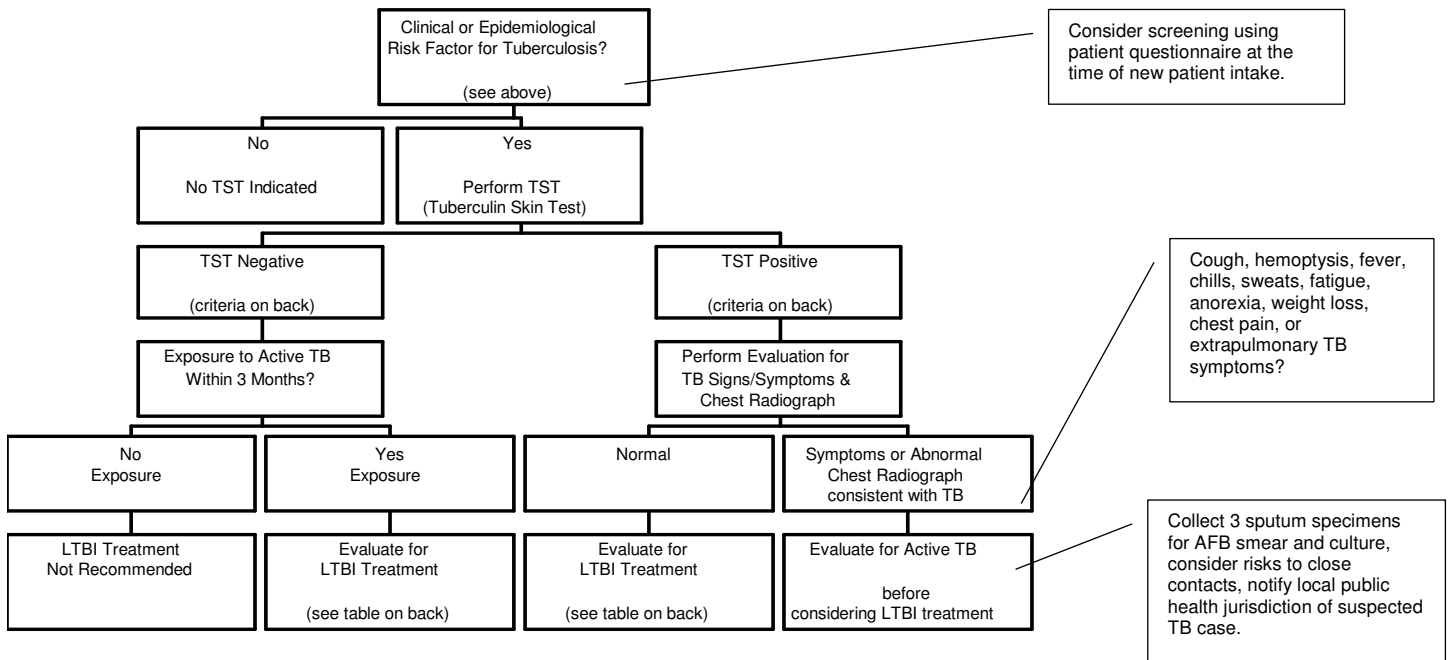
- ♦ Any contacts of active TB cases
- ♦ HIV infection
- ♦ Persons who inject drugs
- ♦ Fibrotic changes on CXR c/w prior TB
- ♦ Foreign born in high prevalence country
- ♦ Resident or employee of high risk facility ¹
- ♦ Health care workers who serve high risk patients
- ♦ Medically underserved and low income populations
- ♦ Special racial and ethnic minority populations ⁴

Those at high risk for developing active TB (if infected)

- ♦ Recent infection (within 2 years)
- ♦ HIV infection
- ♦ Persons who inject drugs
- ♦ Fibrotic changes on CXR c/w prior TB
- ♦ Recent (within 5 years) arrival from high prevalence country
- ♦ Immunosuppression ²
- ♦ Other high risk medical conditions ³
- ♦ Previous TB with inadequate (or undocumented) treatment

1. Prisons, jails, homeless shelters, drug treatment centers, nursing homes and other long-term care facilities, residential facilities for persons with AIDS, hospitals and other health care facilities, TB laboratories.
2. HIV/AIDS, organ transplant recipients, chronic corticosteroid treatment (≥ 15 mg/day of prednisone for ≥ 1 month) or equivalent.
3. Diabetes mellitus, end-stage renal disease, silicosis, cancer of the head and neck, leukemia and lymphoma, intestinal bypass or gastrectomy, chronic malabsorption, malnutrition (≥ 10% below ideal body weight).
4. Special high risk populations in Washington State include homeless and alcoholic persons, Native Americans, and migrant farm workers.

OVERVIEW OF LTBI TESTING AND TREATMENT CONSIDERATIONS:



HOW SHOULD LTBI TESTING BE PERFORMED?

The tuberculin skin test (TST) must be performed correctly using the Mantoux method to yield accurate results. Training information is available from local public health departments or from the CDC (see below). Disregard a BCG vaccination history in all cases (BCG does not commonly cause false positive TST results). In some practice settings, a blood test for LTBI (Quantiferon®) may be available.

SPECIFIC INDICATIONS FOR TESTING AND TREATMENT: adapted from materials from Charles P. Felton National Tuberculosis Center

Category of Person Tested		TST RESULT (mm of induration, not redness)				Comments:
		TST <5 mm	TST ≥5 mm	TST ≥10 mm	TST ≥15 mm	
TB Contact within 3 months	HIV-infected	Treat	Treat	Treat	Treat	Treat even if initial and repeat TST are negative
	Immunosuppressed	Treat	Treat	Treat	Treat	Treat even if initial and repeat TST are negative
	Child <5 years old	Treat*	Treat	Treat	Treat	*Stop if repeat TST neg. 8-12 weeks after last exposure
	No other risk factors	Don't treat	Treat	Treat	Treat	
No Recent TB Contact	HIV-infected	Don't treat	Treat	Treat	Treat	Regardless of CD4 count
	Immunosuppressed	Don't treat	Treat	Treat	Treat	e.g. prednisone ≥15 mg/day for ≥1 month
	Fibrotic changes on chest X-ray	Don't treat	Treat	Treat	Treat	Fibrotic upper lobe opacities >2 cm ² , c/w prior TB
	Recent arrival from high prevalence country	Don't treat	Don't treat	Treat	Treat	Arrival within 5 years
	Injection drug user	Don't treat	Don't treat	Treat	Treat	Regardless of HIV status
	Resident or employee in high risk congregate setting	Don't treat	Don't treat	Treat	Treat	Hospital, nursing home, jail, residence for HIV-infected, homeless shelter, TB lab, healthcare workers, etc.
	High-risk medical conditions (note Immunosuppressed category above)	Don't treat	Don't treat	Treat	Treat	Diabetes mellitus, end stage renal disease, silicosis, leukemia/lymphoma, cancer of the head and neck, gastrectomy, intestinal bypass, malabsorption, malnutrition, weight loss ≥10% IBW
	Child <5 years old	Don't treat	Don't treat	Treat	Treat	
	Children and Adolescents exposed to high risk Adults	Don't treat	Don't treat	Treat	Treat	HIV-infected, injection drug using, or homeless adults
	Pregnant or Lactating	Don't treat	Don't treat	Don't treat	Treat	If pregnant, consider deferring Rx until after delivery
No risk factors	Don't treat	Don't treat	Don't treat	Treat	LTBI testing is discouraged if no TB risk factors	

RECOMMENDED TREATMENT APPROACH FOR LTBI (assuming no signs of active TB):

1. Check baseline liver function tests only if hepatitis risk factors are present (pre-existing liver disease, pregnant or <3 months post-partum, HIV+, or regular alcohol use).
2. Prescribe Isoniazid (INH) 300 mg po qd* for 9 months (add Pyridoxine 50 mg po qd if pregnant, diabetic, malnourished or alcoholic). Fill one month's supply at a time. Stress the importance of full compliance.
3. Instruct patient to stop INH and seek immediate evaluation if they experience adverse symptoms (e.g. rash, numbness in hands or feet, jaundice, abdominal pain, nausea, vomiting, or anorexia).
4. Arrange clinical follow-up monthly to question and examine for adverse effects, and to refill prescription.
5. Repeat liver function tests necessary only if symptoms or signs of hepatitis, abnormal baseline test results, or other hepatitis risk factors (above).

*Other LTBI regimens exist. Note that the INH dose must be weight-adjusted in children. Contact your local TB control program (below) if your patient is a young child, is unable to take INH, or has been exposed to a known INH-resistant case.

REFERENCES/RESOURCES:

American Lung Association of Washington: 206-441-5100; http://www.alaw.org/lung_disease/tuberculosis/

Find Your Local Public Health Office:

Directory of Washington State Local Health Departments/Districts: <http://www.doh.wa.gov/LHJMap/LHJMap.htm>

Local and State TB Control Resources:

TB Control Program for King County: 206-731-4579; for other Washington Counties: 360-236-3443

Seattle & King County TB Control Program: <http://www.metrokc.gov/health/tb/providers.htm>

Washington State DOH TB Control Program: <http://www.doh.wa.gov/cfh/TB/default.htm>

CDC Training and TB Control Resources:

TST instruction kit available from CDC: www.cdcnpi.org/scripts/tb/kit.asp

CDC TB Education and Training Materials: <http://www.cdc.gov/nchstp/tb/pubs/pem.htm>

Interactive Core Curriculum on Tuberculosis: What the Clinician Should Know. Web-based course from CDC: www.cdc.gov/nchstp/tb/webcourses/corecurr/index.htm

Targeted tuberculin testing and treatment of latent TB infection. MMWR 2000; 49 (No. RR-6):

www.cdc.gov/mmwr/preview/mmwrhtml/rr4906a1.htm

Treatment of Tuberculosis. MMWR 2003; 52 (No. RR-11): www.cdc.gov/mmwr/preview/mmwrhtml/rr5211a1.htm

Billing and Coding Information for LTBI:

ICD-9 code for LTBI (positive PPD, without active TB) = 795.5

CPT code for TST (tuberculin skin test, intradermal) = 86580