

Latent Tuberculosis Infection: A Guide for Primary Health Care Providers

Latent tuberculosis infection (LTBI) is the presence of *Mycobacterium tuberculosis* in the body without signs and symptoms or radiographic or bacteriologic evidence of tuberculosis (TB) disease. Approximately one-third of the world's population is infected with *M. tuberculosis*. In the United States, an estimated 9 to 14 million people have LTBI. Targeted testing is recommended to help find and treat persons with LTBI who are at the highest risk for progressing to TB disease. TB testing is only recommended for high-risk groups, with the intent to treat if LTBI is detected. Vermont has a very low incidence of TB, with a median of 6 cases reported each year. Unfocused population-based testing is not cost effective or useful and leads to unnecessary treatment.

TB disease is reportable in Vermont; LTBI is not. The Vermont Department of Health TB Program provides guidance on LTBI treatment, follow-up on contacts of people with pulmonary TB, medications to treat LTBI, and limited financial support for required medical evaluations for those without alternative means to cover these expenses. Public health case management, including directly observed therapy (DOT), is provided for those with TB disease.

Persons at risk for infection with TB include those who have an increased likelihood of exposure to persons with TB disease. This includes known contacts of a person with infectious TB disease and persons who have lived in TB-endemic regions of the world. Risk is also higher in persons who live in parts of the U.S. in which TB is more common and work or reside in facilities or institutions such as homeless shelters, correctional facilities, nursing homes, and other congregate settings that house people who may be at increased risk for TB.

The following factors are associated with an increased risk of progression from LTBI to TB disease: infants and young children under the age of five who have a positive TB test result, HIV infection, injection drug use, radiographic evidence of prior healed TB, recent tuberculin skin test (TST) conversion, and low body weight (10% below ideal). Medical conditions associated with progression to TB disease include diabetes mellitus, silicosis, solid organ transplant, gastrectomy, jejunioileal bypass, head and neck cancers, conditions that require prolonged use of corticosteroids or other immunosuppressive agents such as TNF-antagonists.

The Centers for Disease Control and Prevention (CDC) has recently published updated guidelines for the identification and treatment of LTBI. The full Guide is available at the following website:
<http://www.cdc.gov/tb/publications/LTBI/default.htm>.

The Guide provides detailed information regarding the diagnosis of LTBI, including differentiating between LTBI and TB disease, classification of TST reactions, and use of Interferon-Gamma Release Assays (IGRAs). Here are some important points:

- The presence of TB disease must be excluded before treatment for LTBI is initiated because failure to do so may result in inadequate treatment and development of drug resistance.
- TST must be measured and recorded in mm of induration, not reported as “negative”.
- BCG vaccine is currently used in many parts of the world where TB is common to protect infants and young children from serious disease. History of BCG vaccine does not alter interpretation of the TST.
- A negative TST does not rule out TB in individuals who are severely immunocompromised, including those with untreated HIV infection.
- Contacts of a person with infectious TB disease should be retested 8 to 10 weeks after last exposure when initial TST or IGRA result is negative.
- Children under the age of 5 years and immunosuppressed persons who have negative results should have a chest radiograph. If normal, treatment should be started for LTBI until the second test is performed. If the repeat test is positive, treatment should be continued. If it is negative, treatment can usually be discontinued. However, for some contacts at very high risk, a full course of LTBI treatment may be recommended even in the absence of a positive TST or IGRA result.

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