

# Spotlight on Health

## Latent Tuberculosis

In September 2016, the United States Preventive Services Task Force (USPSTF) published screening guidelines for latent tuberculosis infection (LTBI). In this newsletter, we'll discuss this and other LTBI screening guidelines.

### USPSTF Guidelines<sup>1</sup>

The USPSTF recommends screening asymptomatic adults who are at increased risk for TB. The recommendations do not apply to symptomatic adults or to children and adolescents.

Either a TB skin test (tuberculin skin test [TST]) or a TB blood test (interferon-gamma release assay [IGRA]) can be used as the screening test. Screening can be done just once if the person has a low risk of future exposure or can be done annually if there is a continuing risk of exposure.

### CDC Guidelines<sup>2,3</sup>

The Centers for Disease Control and Prevention (CDC) recommends screening people at increased risk of exposure or progression to TB. Screening can be performed on the same day or at least 1 month later when screening people who are also going to be vaccinated for viral infections.

Screening can be performed using either a TB skin test or a TB blood test. A TB skin test is preferred for children younger than 5 years. A TB blood test is preferred for people who have received a BCG vaccination—BCG vaccination may cause a false-positive skin test—or are not likely to return to have a skin test read.

### Other Guidelines

- *American Academy of Family Physicians (AAFP)*: recommends screening asymptomatic adults for LTBI<sup>4</sup>
- *World Health Organization (WHO)*: recommends testing asymptomatic immunosuppressed people, people in contact with a person with active TB, and people undergoing dialysis; recommends consideration of testing asymptomatic prisoners, healthcare workers, homeless people, illicit drug users, and people from a country in which TB is common; recommends use of a TB skin test or a TB blood test (IGRA)<sup>5</sup>

### Individuals at Increased Risk for LTBI or Active TB<sup>1,2,6</sup>

Individuals at increased risk include people who:

- Are from a country, or have lived in a country, in which TB is common (ie, most countries in Latin America, the Caribbean, Africa, Asia, Eastern Europe, and Russia)



### Tuberculosis Facts

- Caused by *Mycobacterium tuberculosis*
- Spread via respiratory transmission
- Can be latent or active
  - Latent TB: asymptomatic, not infectious, but can progress to active TB; occurs in 30% of people exposed to *M tuberculosis*<sup>1</sup>
  - Active TB: symptomatic and infectious; occurs in 5% to 10% of people with untreated LTBI<sup>1</sup>
- LTBI treatment
  - Prevents or reduces progression to active disease
  - Reduces transmission, morbidity, mortality
- LTBI prevalence: about 5% in the U.S.
  - 23% to 88% among prisoners<sup>1</sup>
  - 19% to 80% among homeless people<sup>1</sup>

- Live or work where TB disease is more common (eg, homeless shelters, prisons, nursing homes)
- Are immunosuppressed, including those who have HIV, are receiving chemotherapy or a TNF $\alpha$  inhibitor, or have had an organ transplant
- Have had close contact with someone who has active TB
- Are in healthcare and work closely with those who have or are at increased risk for active TB
- Are infants, children, or adolescents exposed to adults who are at increased risk for TB
- Are elderly
- Have been infected in the last 2 years
- Inject illegal drugs

## Selecting a Screening Test

Guidelines recommend using either a TB skin test or a TB blood test for LTBI screening. Characteristics for each method are shown below.

TB Skin Test	TB Blood Test
Tuberculin injected into skin	Blood specimen collected from vein
Subjective measurement of test result	Objective measurement of test result
Requires 2 visits to the doctor's office	Requires 1 visit to the doctor's office
Preferred for children under 5 years <sup>5</sup>	Preferred for BCG-vaccinated people <sup>5</sup>
	Preferred for people who cannot, or are unlikely to, return to have a skin test read <sup>5</sup>
Affected by booster phenomenon: annual or serial testing requires 2 baseline tests if first is negative	No booster phenomenon: annual or serial testing requires only 1 baseline test
Can be used during pregnancy	Can be used during pregnancy

BCG, bacille Calmette-Guérin, a TB vaccine commonly used outside the U.S.

Routine use of both tests in a single person is not recommended. Use of both might be helpful, however, when 1) the first test is negative but risk or clinical suspicion is high; or 2) the first test is positive but risk or clinical suspicion is low and/or additional data are needed for patient acceptance. Performing an IGRA blood test 3 days after a TB skin test does not cause false-positive results.<sup>7</sup> Thus, a blood specimen for an IGRA test can be collected on the same day a skin test result is read.

Neither test can distinguish LTBI from active TB disease. To differentiate them, a medical history, physical exam, chest x-ray, and sputum culture are used.

## References

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2. Centers for Disease Control and Prevention. Latent tuberculosis infection: a guide for primary health care providers. [www.cdc.gov/tb/publications/tbip/pdf/targetedtbi.pdf](http://www.cdc.gov/tb/publications/tbip/pdf/targetedtbi.pdf). Accessed November 7, 2016.
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5. Guidelines on the management of latent tuberculosis infection. WHO website. [www.who.int/tb/publications/tbip\\_document\\_page/en/](http://www.who.int/tb/publications/tbip_document_page/en/). Published 2015. Accessed November 7, 2016.
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7. Leyten EMS, Prins C, Bossink AWJ, et al. Effect of tuberculin skin testing on a *Mycobacterium tuberculosis*-specific interferon- $\gamma$  assay. *Eur Respir J*. 2007;29:1212-1216.