



Paul R. LePage, Governor

Mary C. Mayhew, Commissioner

Department of Health and Human Services  
Maine Center for Disease Control and Prevention  
286 Water Street  
11 State House Station  
Augusta, Maine 04333-0011  
Tel. (207) 287-8016  
Fax (207) 287-9058; TTY (800) 606-0215

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Tuberculin skin tests (TST) have been the traditional method to test for latent tuberculosis infection (LTBI). However, in 2010, the Center for Disease Control and Prevention (CDC) issued formal recommendations for the use of Interferon Gamma Release Assay (IGRA) blood test for Tuberculosis (TB). With the addition of the IGRA, medical and public health providers now have another option for identifying individuals with LTBI. Interpretation of either IGRA or TST should always be considered in conjunction with epidemiologic, physical and diagnostic findings since neither test can distinguish between LTBI and active disease and a negative result cannot exclude the possibility of infection or disease. As with TST, the use of IGRA in low-risk person is discouraged. There is generally no indication for following up on a positive IGRA with a TST. Routine testing of patients with both TST and IGRA is not recommended. The following summary points are meant to be helpful to the clinician but should not be a substitute for sound clinical judgment.

**I. Situations where TST is preferred:**

- Children < 5 years of age
- Health care workers for serial testing
- Persons with the following medical conditions-diabetes mellitus, chronic renal failure (IGRA's have not been extensively studied in these groups)

**II. Situations where IGRA may be used:**

- Contact investigation (TST is still an acceptable test). The same test, either IGRA or TST, should be used for initial and follow-up (8 weeks) testing
- Non-USA born Persons (IGRA preferred for persons previously vaccinated with Bacillus Calmette-Guérin vaccine (BCG))
- Persons who have received BCG for cancer therapy
- Populations that are unlikely to return for TST reading

**III. Situations where testing with both TST or IGRA may be considered:**

- Immunocompromised persons (Either test may be falsely negative in these situations)
- If the result of a positive TST is not believed. (IGRA is acceptable but results and management recommendations must be considered within in the context of TB risk)

The following page summarizes the advantages and limitations of each of these tests used to detect LTBI.

## Advantages and Limitations of the TST and the IGRA<sup>1</sup>

Consideration	TST	IGRAs
Diagnosis of latent TB infection	<ul style="list-style-type: none"> <li>• Yes</li> </ul>	<ul style="list-style-type: none"> <li>• Yes</li> </ul>
Correlations of tests results with risk of future TB disease	<ul style="list-style-type: none"> <li>• &gt;100 years of experience</li> <li>• Lifetime risk for developing TB is known</li> </ul>	<ul style="list-style-type: none"> <li>• Risk of developing TB is unknown.</li> <li>• Positive IGRA likely equivalent to positive TST</li> </ul>
Patient encounters	<ul style="list-style-type: none"> <li>• 2 visits (plant and read)</li> </ul>	<ul style="list-style-type: none"> <li>• 1 visit (blood draw)</li> </ul>
Public health testing capacity	<ul style="list-style-type: none"> <li>• TST testing capacity exists</li> <li>• Public Health Nursing (PHN) available to train staff</li> </ul>	<ul style="list-style-type: none"> <li>• Phlebotomy services are not provided by PHN</li> <li>• Specific phlebotomy requirements</li> </ul>
Specific handling and blood shipment requirements to the laboratory	Not applicable	<ul style="list-style-type: none"> <li>• Directions for storage of materials and processing and shipping samples must be followed closely</li> </ul>
Cost of test	<ul style="list-style-type: none"> <li>• Inexpensive</li> </ul>	<ul style="list-style-type: none"> <li>• Moderately expensive</li> </ul>
Cross-reacts with BCG, non-tuberculosis Mycobacterium (mostly an issue in foreign-born populations)	<ul style="list-style-type: none"> <li>• Yes</li> </ul>	<ul style="list-style-type: none"> <li>• No</li> </ul>
Reader bias	<ul style="list-style-type: none"> <li>• Reading of TST is difficult and can result in bias</li> </ul>	<ul style="list-style-type: none"> <li>• None (tests not always conclusive)</li> </ul>
Documentation of result	<ul style="list-style-type: none"> <li>• Depends on accurate recording of TST result</li> </ul>	<ul style="list-style-type: none"> <li>• Laboratory test result are reported as positive, negative or indeterminate</li> </ul>

Adapted from the Commonwealth of Massachusetts Department of Public Health

## Summary Recommendation for the use of TST and IGRA

<b>Situations where TST is preferred</b>
<ul style="list-style-type: none"> <li>• Children &lt; 5 years of age</li> <li>• Persons with the following medical conditions: diabetes mellitus, chronic renal failure. (IGRAs have not been extensively studied in these groups)</li> <li>• Health care workers (serial testing)</li> </ul>
<b>Situations where IGRA may be used</b>
<ul style="list-style-type: none"> <li>• Contact investigation. (TST is still an acceptable test) The same test should be used for initial and repeat testing</li> <li>• Non-USA born persons. (IGRA preferred for persons previously vaccinated with BCG or persons receiving BCG for cancer therapy)</li> <li>• Populations unlikely to return for TST reading</li> </ul>
<b>Situations where testing with both TST and IGRA may be considered</b>
<ul style="list-style-type: none"> <li>• Immuno-compromised persons. (Either test may produce false-negatives in this population)</li> <li>• If the result of a positive TST is not believed. (IGRA is acceptable but results and management recommendations must be considered within the context of TB risk)</li> </ul>

1. CDC Morbidity and Mortality Report: Updated Guidelines for Using Interferon Gamma Release Assays to Detect *Mycobacterium tuberculosis* Infection-United States, 2010. June 25, 2010/59(RR05); 1-25.

[http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5905a1.htm?s\\_cid=rr5905a1\\_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5905a1.htm?s_cid=rr5905a1_e) Accessed January 3, 2012.

\*Document intended for departmental reference