



Whatcom County Health Department Tuberculosis Program

Common TB Screening Questions



- ✚ Why is testing not necessary for those previously positive?
- ✚ What if an individual received the BCG vaccine?
- ✚ How do you rescreen those with past positive tests?
- ✚ Why is two-step testing necessary? What is an IGRA TB lab test?

Definitions:

- **TST** – Tuberculin Skin Test
- **BCG** – (bacilli Calmette-Guerin) Vaccine given to infants and children outside the U.S; provides limited protection against TB in childhood
- **PPD** – **Purified Protein Derivative**; Standard TB skin testing method using 0.1 ml purified Tuberculin protein derivative in an interdermal injection.
- **Positive skin test** – Measurement of INDURATION in millimeters (mm) that is 5 mm, 10 mm, or 15 mm depending on a person's RISK FACTORS for screening. Exact measurement only (12 mm) not range (>10)
- **CXR** – Chest X-ray required for those with a positive TB skin test in order to verify that there are no abnormal findings suggestive of active TB Disease. Only a single view (PA) is necessary for adults.
- **IGRA** – **Interferon Gama Release Assay**: type of lab test used for TB testing. Current IGRA tests include the Quantiferon-TB Gold In-tube (QFT), and the T-Spot
- **LTBI- Latent TB Infection**: *inactive and non-contagious* infection with TB bacteria. A positive TB test in a healthy individual indicates Latent TB infection. Treatment of LTBI reduces future risk of active TB disease

1. Why is retesting not necessary for those previously positive?

(Pertains to documented prior positive test—if not documented see next page)

Once a person has a positive TB test, they will remain positive for life.

TB testing determines if a person has developed an IMMUNE RESPONSE to TB and is not a direct test for the TB bacteria or TB disease. A strong immune response normally develops in healthy people who are exposed and infected with TB. Testing detects this immune response which remains in the immune system for life and causes the TST to stay positive. Though the size of positive TST results can wane over time, they fully boost back after two-step testing. Retesting therefore is an unnecessary use of time and resources.



Be aware! Individuals previously treated for latent TB infection or active TB disease will continue to have positive TB tests. Treatment clears the body of TB bacteria, but does not change the body's ongoing positive immune response to TB. Previously treated individuals should not be retested and should be screened in the same manner as those with a past positive TST.

2. How should those who received BCG vaccine be screened?



The BCG is routinely given to infants and children in most countries of the world (outside of the U.S., Canada and Western Europe) to provide limited protection against TB. **The concern for testing those who received BCG vaccine is the possibility of a false positive skin test.** To address this problem, updated CDC TB Screening Guidelines now recommend using an IGRA blood test (Quantiferon TB Gold or T-Spot) as the preferred screening method for those who received the BCG vaccine. A TST is still acceptable for screening, but positive results may need to be further evaluated with an IGRA lab test. The advantage of the IGRA is that it is more specific and does not cross react with BCG, or other non-TB mycobacteria. A negative lab test following a positive skin test generally rules-out that the individual is infected with TB. In these cases, the skin test is considered a false-positive and lab testing should be used for future screening.

Important Note: Individuals born abroad may not know if they received BCG vaccine as an infant. It is easy to identify if someone received BCG as it leaves a classic scar on the deltoid area and can usually be found with a simple visual inspection. An excellent training resource showing typical BCG scars can be found here: http://www.phac-aspc.gc.ca/tbpc-latb/pdf/recognition-bcg-scars_e.ppt

See also BCG World Atlas: Listing BCG use by country of origin: <http://www.bcgatlas.org/index.php>



3. How to Update & Rescreen Those With Past Positive TB Tests

Even though repeat testing is unnecessary, a person must have **written documentation** of a past positive test in order to complete updated TB screening. If a person does not have a copy of their past record, it is usually possible to obtain documentation by requesting records from the agency or provider that did the testing.

If a person does not have documentation of their past positive test and prior records are not available, it will be necessary to replace a skin test. **There is no harm in placing a TST on someone who has had a past positive test.** Minor local sensitivity reactions such as increased itching, redness, and slight blistering can occur but will spontaneously resolve. Another option to avoid a skin reaction is to do an IGRA lab test to confirm infection (higher cost).

Once a positive test is verified by past documentation or by retesting, evidence of having a normal chest x-ray is then required. An initial chest x-ray is usually done at the time of the first positive skin test. If it is normal, the original report can be used for ongoing documentation whenever re-screening is required. A key TB standard to remember is that **the original chest X-ray does not “expire” or need to be repeated unless new symptoms develop.** If a person does not have documentation of their prior X-ray, it is usually possible to request a copy of the original x-ray report directly from the radiology provider. If no chest x-ray was done or the past record is not available, a chest X-ray will need to be ordered (single PA view for adults)

If documentation of a past positive skin test and a normal chest x-ray is available, only a **symptom review** is required. This review is done by direct interview of the person being screened using a TB specific symptom screening tool.



4. Symptom Review & Screening Reports

A symptom review can be done by a nurse or other health care professional that is familiar with the signs and symptoms of TB disease. The purpose of a symptom review is to assess for symptoms indicating possible TB disease that include:

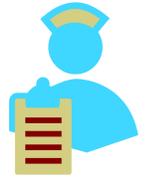
- Productive cough lasting 3 weeks or more (without other known cause)
- Persistent fatigue / malaise (without known cause)
- Drenching night sweats (start abruptly, limited duration, not related to hormonal changes)
- Significant weight loss (unintentional)
- Fever
- Coughing up blood (hemoptysis)
- Chest pain
- New or unusual lumps on the body (Lymphadenopathy)

If the symptom review is negative (no changes or symptoms) and screening is for an employee of the agency providing the screening, the updated symptom review should be documented and filed in the employee's records according to agency policy. The employee should be reminded to report any changes in TB symptoms during the next year.

If TB screening services are being provided to students or others from outside agencies, a written report documenting updated TB screening should be given to the individual at the time of service. This report should include date and type of TB test (TST or lab test), date and interpretation of results (historical dates if prior documentation available), date and results of X-ray (past X-ray date if report verified), and documentation of current negative symptom review.

If concerning symptoms of TB are present, call the health department at 676-4593 to consult with a TB program Nurse. Additional testing and evaluation may be necessary.

5. Why is two-step tuberculin skin testing necessary? Does a two-step have to be repeated for each new employer or health care training program?



Note: two-step testing pertains to skin testing only. A single IGRA blood test is sufficient for baseline screening

The purpose of two-step skin testing is to establish an accurate baseline for those who will have ongoing testing. Two-step testing primes the immune system to respond so that even very old or distant infections can be identified before an individual starts training or working in a new facility.

A key procedural point on two-step testing is that the recommended 1 - 3 week interval between tests is a **minimum** and not a maximum time frame for spacing the two tests. If a person returns more than 3 weeks after their first test, it is acceptable to continue screening and to place a second step. **Any second test within 12 months of a first test is considered a valid second-step.**

For new employees in health care settings (or for those changing jobs) only one TST is necessary for baseline screening if they have documentation of a negative TST within the previous 12 months. The date of the prior documented test can be entered as the date of the 1st step and a current test entered as the date for the second-step. [See Box 1 MMWR guidelines on two-step testing next page](#)

6. What is the IGRA blood test for TB? How do I order it?



Currently there are two IGRA tests available in Whatcom County -- the Quantiferon TB Gold In-tube (QFT) and T-Spot lab tests. Updated CDC TB screening guidelines state that **an IGRA lab test can be used in place of a traditional skin test for all types of TB screening**, with the exception children under 5. The CDC guidelines emphasize that both the TST and IGRA are considered equally valid tests. However, there are certain situations where one type of test is now preferred. See WCHD fact sheet on IGRA as well as link to full CDC reference.

A. Advantages of using the IGRA:

- only one visit /one test is required (no 2nd step necessary)
- does not cross-react with prior BCG vaccine
- does not react with other non-TB mycobacteria
- standardized without the errors associated with placing /reading of skin tests
- results are available in ~3 days

B. Disadvantage of using IGRA:

- Higher cost— (~\$130.00) *For those without insurance, Peace Health lab offers an “Easy Pay” discount if paid at date of service (~\$80.00).* It may help to remind patients that the cost and need for a chest X-ray will be spared if the QFT is negative.
- Coverage: the IGRA is covered by most insurance, including Medicaid & Medicare
- A specialized QFT collection kit is required to perform test. Specialized training is needed for drawing and handling the IGRA test. Most Peace Health & Lab Corp stations carry test kits.

7. Ordering QuantiFeron TB Gold In-Tube lab test (QFT)

Peace Health Lab and Lab Corp offer the QFT. (*A specialized collection kit must be used.*)

Peace Health Lab order code: **58150** Quantiferon-TB Gold In-Tube

CPT billing code for IGRA: **86480** (TB IGRA blood test)

ICD- 9 Code:

- 795.51 Positive TST without active tuberculosis
- V74.1 Special screening exam bacterial diseases TB
- V 01.1 Contact with or exposure to TB

Reference

CDC MMWR 2010; 59(No.RR-5) “Updated Guidelines for Using IGRA to Detect Mycobacterium TB Infection” <http://www.cdc.gov/mmwr/PDF/rr/rr5905.pdf>

Blood assay for mycobacterium tuberculosis (QFT or T-Spot) does not require two-step testing and is more specific than skin testing. Blood Assays that uses *M. tuberculosis*-specific antigens (e.g., QFT-G) are not expected to result in false-positive results in persons vaccinated with BCG. Baseline test results should be documented, preferably within 10 days of HCWs starting employment.

Baseline Testing for *M. tuberculosis* Infection After TST Within the Previous 12 Months

A second TST is not needed if the Health Care Worker (HCW) has a documented TST result from any time during the previous 12 months. If a newly employed HCW has had a documented negative TST result within the previous 12 months, a single TST can be administered in the new setting (Box 1). This additional TST represents the second stage of two-step testing. The second test decreases the possibility that boosting on later testing will lead to incorrect suspicion of transmission of *M. tuberculosis* in the setting.

A recent TST (performed in ≤ 12 months) is not a contraindication to a subsequent TST unless the test was associated with severe ulceration or anaphylactic shock which are substantially rare adverse events (30,237–239). Multiple TSTs are safe and do not increase the risk for a false-positive result or a TST conversion in persons without infection with mycobacteria (39).

Baseline Documentation of a History of TB Disease, a Previously Positive Test Result for *M. tuberculosis* Infection, or Completion of Treatment for LTBI or TB Disease

Additional tests for *M. tuberculosis* infection do not need to be performed for Health Care Workers with a documented history of TB disease, documented previously positive test result for *M. tuberculosis* infection, or documented completion of treatment for LTBI or TB disease. Documentation of a previously positive test result for *M. tuberculosis* infection can be substituted for a baseline test result if the documentation includes a recorded TST result in millimeters (or lab result), including the concentration of cytokine measured (e.g., IFN- γ). All other HCWs should undergo baseline testing for *M. tuberculosis* infection to ensure that the test result on record in the setting has been performed and measured using the recommended diagnostic the recommended procedures (see Supplement, Diagnostic Procedures for LTBI and TB Disease).

A recent TST (performed in ≤ 12 months) is not a contraindication to the administration of an additional test unless the TST was associated with severe ulceration or anaphylactic shock, which are substantially rare adverse events (30,237,238).

BOX 1 Indications for two-step tuberculin skin tests (TSTs) <http://www.cdc.gov/mmwr/pdf/rr/rr5417.pdf>.

Situation Recommended testing	
No previous TST result	Two-step baseline TSTs
Previous negative TST result (documented or not) >12 months before new employment	Two-step baseline TSTs
Previous documented negative TST result ≤ 12 months before new employment	Single TST needed for baseline testing; this test will be the second-step
≥ 2 previous documented negative TSTs but most recent TST >12 months before new employment	Single TST; two-step testing is not necessary (result would have already boosted)
Previous documented positive TST result	No TST
Previous undocumented positive TST result*	Two-step baseline TST(s) OR lab test
Previous BCG \dagger vaccination	Lab test preferred CDC UPDATE 2010 (Previously Two-step baseline TST recommended)

* For newly hired health-care workers and other persons who will be tested on a routine basis (e.g., residents or staff of correctional or long-term-care facilities), a previous positive TST is not a contraindication to a subsequent TST, unless the test was associated with severe ulceration or anaphylactic shock, which are substantially rare adverse events. If the previous positive TST result is not documented, administer two-step TSTs or offer blood assay lab test (QFT)

\dagger Bacille Calmette-Guérin