

## Undergraduate/Graduate Health Professional Programs

Postgraduate Medicine Learners- see [Postgraduate Medicine TB screening](#)

Tuberculosis (TB) is a bacterial infection acquired by close contact with a person with active (infectious) TB disease. The risk of exposure is increased by living or working for one or more months in a country with a high incidence of TB, particularly with direct patient contact in a hospital or indoor setting, but possibly including work in prisons, homeless shelters, refugee camps or inner-city slums. While most individuals infected with TB have latent (inactive) TB infection and are not contagious, progression to active TB disease can occur at any time, the risk of reactivation is highest in the first two years after infection and is also increased by HIV infection, fibronodular scarring on chest x-ray, chronic steroids (equivalent of prednisone  $\geq 15$  mg/day for  $\geq 1$  month), other immunosuppressive medications, and end stage renal failure. Symptoms of active TB disease include persistent cough or fever lasting more than three weeks, bloody sputum (hemoptysis), night sweats, and unexplained weight loss. Both latent TB infection and active TB disease can be cured with antibiotic medication.

TB infection is diagnosed with tuberculin skin testing (TST) or Interferon-gamma Release Assays (IGRA). TST is recommended (IGRA is not acceptable), whenever it is planned to repeat the test later to assess risk of new infection, such as repeat testing in a contact investigation of health care workers/learners with potential for ongoing exposure. The two-step TST provides more reliable baseline data so that later conversion can be confidently diagnosed, a single TST may be negative but will stimulate an anamnestic immune response in individuals with remote TB infection, so that a second test at any time from 7 days to 12 months later is positive ("booster effect").

Negative TST usually means there is no infection but can also occur after recent infection (it takes up to eight weeks after exposure for the skin test to become positive), or in individuals with a weak immune system (for example, due to HIV infection or active TB disease).

Positive TST usually indicates TB infection but can also occur after BCG vaccination if the vaccine was given after age 12 months or more than once, or infection with other TB-like bacteria. Because IGRA is not affected by BCG vaccination, it is useful for assessing BCG-vaccinated individuals with positive TST. Positive IGRA is most likely due to TB infection.

### Faculty of Health Sciences requirements for undergraduate and graduate health professional programs:

**Protection with N95 mask:** Learners must hold a valid N95 maskfit certification for the duration of their program.

#### Screening prior to program start:

- Baseline two-step TST is required (regardless of history of BCG vaccine) unless positive TST or positive IGRA or previous treatment for TB is documented. A two-step TST requires four visits to a health care provider – step one is given day one and read 2-3 days later, step two is given between 7 days and 12 months after step one was given (ideally 7-28 days) and read 2-3 days later. A two-step test from any time in the past is accepted and does not need to be repeated. An additional single test is required if the last TST was negative and given before March 1st the year of program entry. Note TST must be given before OR at least 28 days after a live vaccine (MMR, Varicella). IGRA may be submitted as an alternative to skin testing ONLY by international visiting elective students; IGRA must be tested either before OR at least 28 days after a live vaccine.
- If positive TST or other positive TB history is documented, a chest x-ray report dated subsequent to the positive TST or positive TB history, and symptom assessment are required. If the initial x-ray is negative, a more recent x-ray is not required unless symptoms of active TB disease are present. Learners with a normal chest x-ray and no symptoms of active TB disease will be fully cleared for participation in clinical activities.

#### Continuing surveillance:

In addition to baseline TB screening on program entry, continuing surveillance is required throughout the program. Learners must withdraw from clinical activities and report to their program manager and Health Screening Office if previous negative TST converts to positive, or if they are diagnosed with active TB disease.

#### For more information:

[Hamilton Public Health: Tuberculosis reporting guidelines and resources](#)

[Tuberculosis: Health Canada](#)

[Canadian Tuberculosis Standards 8th Edition](#)

**Questions?** Contact the Health Screening Office: 905-525-9140 ext 22249, hrsadmin@mcmaster.ca