

Diagnosing or excluding tuberculosis (TB) disease, and assessing the probability of latent TB infection (LTBI), requires a combination of epidemiologic, historical, medical and diagnostic findings that should be taken into account when interpreting QuantiFERON TB Gold IT results. See general guidelines on the diagnosis and treatment of TB disease and LTBI (<http://www.cdc.gov/nchstp/tb/>) .

The QuantiFERON TB Gold IT test is an interferon-gamma release assay (IGRA) that measures cell mediated immune response to antigens that simulate the mycobacterial proteins ESAT-6, CFP-10, and TB7.7. A positive test is due to gamma interferon release in individuals infected with *Mycobacterium tuberculosis* complex organisms, including *Mycobacterium tuberculosis*, *Mycobacterium bovis*, *Mycobacterium africanum*, *Mycobacterium microti*, and *Mycobacterium canetti*.

A positive QuantiFERON-TB Gold result may indicate infection with *Mycobacterium tuberculosis*, however, false positives do occur. Positive results due to reactivity to other mycobacteria such as *Mycobacterium kansasii*, *Mycobacterium szulgai*, and *Mycobacterium marinum* may occur. A false positive should not occur in individuals who have received BCG vaccination.

A negative QuantiFERON-TB Gold result does not preclude *Mycobacterium tuberculosis* infection. False negatives can be due to the stage of the disease, comorbid conditions affecting immune function, or other immunological factors.

The American Academy of Pediatrics¹ offers the following guidelines for the use of IGRA tests in children due to limited data in this age group.

- The use of IGRA is recommended in place of the tuberculin skin test (TST) in immunocompetent children 5 years of age or older.
- Children with positive results should be considered infected with *Mycobacterium tuberculosis*.
- Negative results cannot universally be interpreted as lack of infection.
- Indeterminate results do not exclude tuberculosis infection.
- IGRA may be useful in determining whether a reactive TST in a BCG-vaccinated child is due to TB infection or a false positive result caused by BCG.

Use in children < 5 years of age:

- A higher rate of “indeterminate low mitogen” has been observed in children < 5 years compared with the general population.² If a definitive result is obtained, the accuracy does not differ from that in the general population.
- Seattle Children’s Laboratory also observes a higher indeterminate rate in younger children; 14% in children <5 yrs, compared to 4.3% in children ≥ 5 yrs. In the presence of an indeterminate QG-TB test, we recommend follow-up skin PPD testing for this age group.

1. American Academy of Pediatrics. Tuberculosis. In: Pickering LK, Baker CJ, Kimberlin DW, Long SS, eds. Red Book: 2009 report of the Committee in Infectious Disease. 28th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2009:680-701.
2. Bergamini et.al. Performance of commercial blood tests for the diagnosis of latent tuberculosis infection in children and adolescents. *Pediatrics* (2009) 123(3):e419-e424.