

## **Latent Tuberculosis Diagnosis in Children by Using the QuantiFERON-TB Gold In-Tube Test.**

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**BACKGROUND:** The QuantiFERON-TB Gold test was the first blood test to be approved for the diagnosis of latent tuberculosis infection. Although it has been shown to be sensitive and specific in adults, limited data on its performance in children are available.

**METHODS:** This was a prospective study of children receiving health care in New York, New York. Each child was assessed for risk factors for *Mycobacterium tuberculosis* infection, underwent tuberculin skin testing, and had a QuantiFERON-TB Gold In-Tube test performed. The concordance between tuberculin skin test and QuantiFERON-TB Gold In-Tube test results was calculated, and the results were analyzed according to the likelihood of exposure to *M tuberculosis*.

**RESULTS:** Data for 207 children with valid tuberculin skin test and QuantiFERON-TB Gold In-Tube test results were analyzed. There was excellent correlation between negative tuberculin skin test results and negative QuantiFERON-TB Gold In-Tube test results; however, only 23% of children with positive tuberculin skin test results had positive QuantiFERON-TB Gold In-Tube test results. Positive QuantiFERON-TB Gold In-Tube test results were associated with increased likelihood of *M tuberculosis* exposure, and interferon gamma levels were higher in children with known recent exposure to *M tuberculosis*, compared with children with older exposure histories. Younger children produced lower interferon gamma levels in response to the mitogen (phytohemagglutinin) control used in the QuantiFERON-TB Gold In-Tube test, but indeterminate results were low for children of all ages. Performance characteristics were similar across all age groups.

**CONCLUSION:** The QuantiFERON-TB Gold In-Tube test is a specific test for *M tuberculosis* exposure in children, with performance characteristics similar to those for adults residing in regions with low levels of endemic disease. Concerns about test sensitivity, especially for children <2 years of age, will require additional prospective long-term evaluation.