



**TUBERCULOSIS SCREENING GUIDELINES
FOR CONNECTICUT SCHOOLS**
Connecticut Department of Public Health, Infectious Diseases Section
June 2011

These recommendations from the Connecticut Department of Public Health (DPH) in conjunction with the Connecticut State Department of Education (CSDE), the Connecticut Advisory Committee for the Elimination of Tuberculosis and the School Health Committee of the Connecticut Chapter of the American Academy of Pediatrics replace those issued May 2005, and are intended to guide local or regional boards of education, health departments and pediatricians in developing school district policies regarding tuberculosis (TB) testing requirements for students and staff and, if applicable, administering a TB testing program on-site. In these guidelines, a student is defined as a child attending PK through Grade 12 schools in Connecticut, including Headstart, school readiness or other PK programs administered by a local or regional board of education.

Connecticut General Statutes Section 10-206 (b) and (c) mandate that each student have a health assessment at three time periods during his/her primary and secondary school education: “prior to public school enrollment,” during Grade 6 or 7, and during Grade 9 or 10. Connecticut General Statutes Section 10-206 (c) states that: “The assessment shall also include tests for tuberculosis...where the local or regional board of education, in consultation with the school medical advisor and the local health department, or in the case of a regional board of education, each local health department, determines that said screening or test is necessary...”

Recommended Testing Schedule

Routine TB testing of all students at school enrollment or for any of the required health assessments is discouraged. The current low rates of transmission of TB in all parts of Connecticut do not justify this practice.

It is recommended that at each mandated health assessment, students are screened for their risk of exposure to TB. It is further recommended that all local or regional boards of education mandate that any child determined to be at risk for exposure to TB be tested with either (but not both) a tuberculin skin test (TST) or an interferon-gamma release assay (IGRA) and that anyone found to be positive have an appropriate medical management plan developed that includes a chest radiograph. A model questionnaire is attached that can be used for screening (see Appendix A – Risk Assessment Questionnaire for Tuberculosis Exposure).

Students not already known to have a positive test should be tested if they have any of the following risk factors for TB infection:

- a. were born in a high risk country of the world (see attached list of countries – Appendix B) and do not have a record of a TST or IGRA (e.g. QuantiFERON®-TB Gold In-Tube test (QFT-GIT) or •T-SPOT®.TB test) performed in the United States (U.S.);

- b. have traveled to a high risk country, stayed for at least a week with substantial contact with the indigenous population since the previously required examination;
- c. have had extensive contact with persons who have recently come to the U.S. from high risk countries since the previously required examination;
- d. had contact with person(s) suspected to have TB; or
- e. lives with anyone who has been in a homeless shelter, jail or prison, uses illegal drugs or has HIV infection.

Local or regional boards of education should create policies to ensure that all students born in high risk countries who are entering schools in Connecticut for the first time receive either a TST or IGRA. A history of Bacille Calmette-Guerin (BCG) vaccination is not a contraindication to testing nor should it be considered in interpretation of any test used to detect TB infection.

The results of the risk assessment and testing, when done, should be recorded on the State of Connecticut Health Assessment Record (HAR-3) or directly in the student's Cumulative Health Record (CHR-1).

Personnel

School personnel are not required by state statute or regulation to be tested. However, it is recommended that all staff with a risk for having latent TB infection have a baseline TB test at the time of employment and the result recorded in the employee health record. Those with a documented history of a previously positive test do not need to be re-tested; if possible, documentation of a negative chest x-ray and any treatment for the positive test should also be recorded in the employee health record. Testing of persons with a negative test is not routinely necessary, but should be done if exposure to a potentially contagious TB case occurs in the school or if the employee develops symptoms of TB.

Type of Test and Recording Results

There are currently two types of tests available to determine infection with TB: a skin test and blood tests. Either test can be used to diagnose latent TB infection but are not diagnostic for TB disease.

Tuberculin Skin Test (TST)

The Mantoux test (intradermal injection method) is the only acceptable method for performing a TST. Reading of any induration is along the transverse (perpendicular) axis of the forearm. The result of the test should always be recorded in millimeters, even if there is no reaction.

Interferon gamma release assays (IGRAs)

The two main types of blood tests available for detecting TB infection are the QuantiFERON®-TB Gold In-Tube test (QFT-GIT) and the •T-SPOT®.TB test . The QFT-GIT is the test most commonly performed and is available at commercial labs and some hospital labs in Connecticut. The main advantages of this blood test is that it requires only a single visit and the antigens in the test do not cross react with BCG; this means the results of the test are not impacted by BCG vaccination. Test results are reported as

negative, positive or indeterminate. IGRAs are not recommended for children <5 years old since there have not been enough studies to determine the accuracy of this test in this age group.

Interpretation and Management of Test Results

Negative Test Results

In general, an induration of 0–9 mm obtained by screening using the TST should be considered negative. If testing is being done as part of a contact investigation following discovery of a potentially infectious case, induration of 0–4 mm should be considered negative. No further evaluation is indicated for a TST with these measurements or a negative blood test unless the child or employee has a chronic unexplained cough or is a contact to a known infectious case of TB. In the latter instance, initiation of isoniazid (INH) preventive therapy and repeat testing in 2 months may be indicated.

Indeterminate Test Results

Blood tests reported as indeterminate are not definitive results and may need to be repeated. These results should be discussed with the Connecticut Department of Public Health TB Control Program to receive recommendations on next steps in evaluation of the student or employee.

Positive Test Results- Students

In most circumstances for children with a TB risk factor listed above, induration of ≥ 10 mm on a TST should be considered a positive result. If testing is conducted as part of a contact investigation, induration ≥ 5 mm should be considered positive. These criteria apply to all children, including those who have received BCG vaccination in the past. For all positive TSTs and blood tests, questioning about symptoms and a chest x-ray should be performed to rule out active TB disease (see Appendix A – Risk Assessment Questionnaire for Tuberculosis Exposure). While a frontal and lateral chest x-ray is preferable for all children, both views should be performed for all children ≤ 6 years of age.

If active TB disease is ruled out, the student’s health care provider should initiate treatment with INH. To ensure adherence to the recommended 9 month course of daily medication therapy, arrangements may need to be made for INH to be administered on school days by the school nurse or designee, as authorized in Section 10-212a of the Connecticut General Statutes.

A child with a new positive TST or IGRA result must be reported to the local health department and the Connecticut DPH Tuberculosis Control Program if:

- a) the child is <6 years old;
- b) is a known contact to a person with infectious TB; or
- c) is co-infected with HIV.

While not required for children who are not part of the above groups, newly positive results may indicate recent TB transmission and reporting may facilitate a follow-up contact investigation. All persons for whom INH treatment is indicated can receive free medication from the DPH.

Positive Test Results- Personnel

Positive results in personnel are defined in the same way as positive results in students. Similarly, each employee with a positive TST or IGRA result should have a review of symptoms and a chest x-ray to

evaluate for possible active TB disease. When indicated, employees should be offered treatment with INH by their physicians. Repeat chest x-rays are NOT indicated unless the employee develops symptoms consistent with TB.

For further information, please contact the DPH TB Control Program at 860-509-7722, or the CSDE School Health Consultant at 860-807-2108.

References

American Academy of Pediatrics. 2009. Tuberculosis. In *Red Book: Report of the Committee on Infectious Diseases*, 28th ed. American Academy of Pediatrics, Elk Grove Village, IL.

Centers for Disease Control and Prevention. Targeted tuberculin testing and treatment of latent tuberculosis infection. *MMWR* 2000;49 (No. RR-6).

Centers for Disease Control and Prevention. Updated Guidelines for Using Interferon Gamma Release Assays to Detect *Mycobacterium tuberculosis* Infection, United States—2010 *MMWR* 2010; 59 (No.RR-5).

Pediatric Tuberculosis Collaborative Group. Targeted Tuberculin Skin Testing and Treatment of Latent Tuberculosis Infection in Children and Adolescents. *Pediatrics* 2004; 114; 1175–1201.

Resources

Connecticut Department of Public Health. Tuberculosis Control Program
<http://www.ct.gov/dph/cwp/view.asp?a=3136&q=388584>

Centers for Disease Control and Prevention, Division of Tuberculosis Elimination
<http://www.cdc.gov/tb>

World Health Organization, Global Health Observatory Data Repository
<http://apps.who.int/ghodata/?vid=500>

Appendix A: Risk Assessment Questionnaire for Tuberculosis Exposure

1. Was your child born outside the U.S.?

If born in any of the countries in the attached list, a TST or IGRA should be performed (Note: IGRAs are not recommended for children <5 years old).

2. Has your child traveled outside the U.S.?

If the child traveled to any of the listed countries, stayed for >1 week and interacted with the local population, including local family or friends, then a TST or IGRA should be performed. For most children, testing, after evaluation for possible signs and symptoms of TB disease or exposure to a person with contagious pulmonary TB, can take place 8–10 weeks after return to the United States.

3. Has your child been exposed to anyone with TB disease?

If yes, determine whether the person had TB disease or latent TB infection, when the exposure occurred and what the nature of the contact was. If it is confirmed that the person had known or suspected TB disease, a TST or IGRA should be performed.

4. Does your child have close contact with someone with a positive TST or IGRA?

If yes, see previous question for follow-up information needed.

5. Does your child live with anyone who has been in jail or prison, a shelter, who injects illegal drugs or has HIV?

If yes, then a TST or IGRA should be performed.

6. Has your child eaten unpasteurized cheese from Mexico or Central America since their last TST or IGRA?

If yes, a TST or IGRA should be performed.

Appendix B: List of High Risk¹ Tuberculosis Countries

Afghanistan	Georgia	Papua New Guinea
Algeria	Ghana	Paraguay
Angola	Guam	Peru
Anguilla	Guatemala	Philippines
Argentina	Guinea	Poland
Armenia	Guinea-Bissau	Portugal
Azerbaijan	Guyana	Qatar
Bahrain	Haiti	Republic of Korea
Bangladesh	Honduras	Republic of Moldova
Belarus	India	Romania
Belize	Indonesia	Russian Federation
Benin	Iraq	Rwanda
Bhutan	Japan	Saint Vincent and the Grenadines
Bolivia (Plurinational State of)	Kazakhstan	Sao Tome and Principe
Bosnia and Herzegovina	Kenya	Senegal
Botswana	Kiribati	Serbia
Brazil	Kuwait	Seychelles
Brunei Darussalam	Kyrgyzstan	Sierra Leone
Bulgaria	Lao People's Democratic Republic	Singapore
Burkina Faso	Latvia	Solomon Islands
Burundi	Lesotho	Somalia
Cambodia	Liberia	South Africa
Cameroon	Libyan Arab Jamahiriya	Sri Lanka
Cape Verde	Lithuania	Sudan
Central African Republic	Madagascar	Suriname
Chad	Malawi	Swaziland
China	Malaysia	Syrian Arab Republic
China, Hong Kong Special Administrative Region	Maldives	Tajikistan
China, Macao Special Administrative Region	Mali	Thailand
Colombia	Marshall Islands	The former Yugoslav Republic of Macedonia
Comoros	Mauritania	Timor-Leste
Congo	Mauritius	Togo
Cook Islands	Micronesia (Federated States of)	Tonga
Côte d'Ivoire	Mongolia	Trinidad and Tobago
Croatia	Montenegro	Tunisia
Democratic People's Republic of Korea	Morocco	Turkey
Democratic Republic of the Congo	Mozambique	Turkmenistan
Djibouti	Myanmar	Tuvalu
Dominican Republic	Namibia	Uganda
Ecuador	Nepal	Ukraine
El Salvador	New Caledonia	United Republic of Tanzania
Equatorial Guinea	Nicaragua	Uruguay
Eritrea	Niger	Uzbekistan
Estonia	Nigeria	Vanuatu
Ethiopia	Northern Mariana Islands	Venezuela (Bolivarian Republic of)
French Polynesia	Pakistan	Viet Nam
Gabon	Palau	Yemen
Gambia	Panama	Zambia
		Zimbabwe

¹ Greater than 20/100,000 population
Estimates can be found at <http://apps.who.int/ghodata/?vid=500>