

## ACHA Guidelines

# Tuberculosis Screening and Targeted Testing of College and University Students

## Purpose

Screening and targeted testing for tuberculosis (TB) is a key strategy for controlling and preventing infection on college and university campuses. Early detection provides an opportunity to promote the health of affected individuals through prompt diagnosis and treatment while preventing potential spread to others. Implementation of a screening and targeted testing program not only addresses this public health concern in campus communities but also contributes to the larger public health goal of reducing the burden of TB in the United States.

This document provides guidelines for screening the incoming student population, testing those at increased risk, and providing appropriate follow-up care for students diagnosed with latent TB infection (LTBI) or TB disease.

## Definitions

In this document, “screening” refers to the process of identifying persons at high risk for TB infection and disease. Screening is conducted through a questionnaire in which the student identifies any risk factors for TB infection and disease. “Testing” refers to the testing procedure for diagnosing LTBI, i.e., interferon gamma release assay (IGRA) or Mantoux tuberculin skin test (TST).

Risks for exposure to and/or infection with *M. tuberculosis* have been identified through epidemiological and population-based studies (see Table 1). A sample screening questionnaire, developed based on these risk factors, is provided in see Appendix B. The questionnaire is designed for use by institutions for the incoming student population to appropriately target students at risk for TB who would benefit from testing.

Refer to Table 2 for those factors that place an individual who is infected with TB at higher risk for progressing to active disease. Typically, factors are identified in

individuals by health care providers in the clinic setting. Those at risk for exposure should be tested and, if positive, treated.

## Whom to Screen

All incoming students should be screened for TB risk factors. Screening should be done using a standard questionnaire like the one provided in Appendix B. While all incoming students should be screened, only those students with identifiable risk factors for exposure to TB and/or for TB disease should be tested. Incoming students at low risk should not be tested for TB. Students with a documented previous positive test should not be retested but may benefit from a review of their situation with a college health provider.

The United States is primarily a low-incidence country, so most U.S.-born incoming students will not have risk factors for TB and will not need TB testing. However, international students arriving from countries or territories with an increased incidence of TB should be tested because this subpopulation has been identified epidemiologically as having a higher incidence of LTBI and an increased risk for developing active TB disease.<sup>1</sup>

High-incidence areas are defined as countries or territories with an average annual incidence of TB disease of greater than or equal to 20 cases per 100,000 population. Most countries in Africa, Asia, Central America, Eastern Europe, and South America are included in this group, as identified by the World Health Organization (WHO) Global Health Observatory. See Appendix A for a detailed list of these countries. Starting in 2022, the ACHA TB Workgroup adopted a moving average methodology to reflect trends in TB incidence.<sup>2</sup>

While national trends indicate a decline in the overall number of TB cases since 1993, active disease transmission continues to occur. It is important to focus on local epidemiology to identify trends in individual states or

<sup>1</sup> Centers for Disease Control and Prevention (CDC). Controlling Tuberculosis in the United States: Recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. MMWR November 2005; 54 (No. RR-12):4-5.

<sup>2</sup> The ACHA TB Workgroup consists of members of the ACHA Vaccine-Preventable Diseases Committee and Emerging Public Health Threats and Emergency Response Coalition. The subgroup adopted this methodology to address the countries that hover around the 20 cases per 100,000 threshold, which tend to come on and off the high-incidence list. See Appendix B for more information.

regions. The epidemiology of TB among foreign-born populations differs considerably from area to area. To tailor efforts to local needs, campus TB-control programs should develop epidemiologic profiles to identify groups of persons in their jurisdictions who are at higher risk for TB. In 2009, approximately 60% of TB cases in the United States occurred in foreign-born individuals. For a list of

high burden countries and their profiles, see WHO Tuberculosis Country Profiles at [www.who.int/tb/country/data/profiles/en/](http://www.who.int/tb/country/data/profiles/en/) or download this spreadsheet created by ACHA's TB Workgroup: [https://www.acha.org/documents/Resources/TB\\_incidence\\_2019-21\\_for\\_ACHA\\_2023\\_TB\\_Guidelines.xlsx](https://www.acha.org/documents/Resources/TB_incidence_2019-21_for_ACHA_2023_TB_Guidelines.xlsx).

TABLE 1: Persons at Higher Risk for Exposure to and/or Infection with *M. tuberculosis*

- Close contacts of persons known or suspected to have active TB disease
- Foreign-born persons from areas that have a high incidence of active TB disease
- Persons who visit areas with a high prevalence of TB disease, especially if visits are frequent or prolonged
- Residents and employees of high-risk congregate settings (e.g., correctional facilities, long-term care facilities, and homeless shelters)
- Health care workers who serve clients who are at increased risk for active TB disease
- Populations defined locally as having an increased incidence of latent *M. tuberculosis* infection or active TB disease, possibly including medically underserved, low-income populations, or persons who abuse drugs or alcohol
- Infants, children, and adolescents exposed to adults who are at increased risk for latent tuberculosis infection or active TB disease

Source: Centers for Disease Control and Prevention (CDC), Division of Tuberculosis Elimination. Core Curriculum on Tuberculosis: What the Clinician Should Know: Chapter 1, Table 1.3. Persons at higher Risk for Exposure to and/or Infection with *M. tuberculosis*. 6th edition (2013). [https://www.cdc.gov/tb/education/corecurr/pdf/corecurr\\_all.pdf](https://www.cdc.gov/tb/education/corecurr/pdf/corecurr_all.pdf) Accessed March 21, 2022.

TABLE 2: Persons at Increased Risk for Progression of LTBI to TB Disease

- Persons infected with HIV
- Children younger than 5 years of age
- Persons who were recently infected with *M. tuberculosis* (within the past 2 years)
- Persons with a history of untreated or inadequately treated TB disease, including persons with fibrotic changes on chest radiograph consistent with prior TB disease
- Persons who are receiving immunosuppressive therapy such as tumor necrosis factor-alpha (TNF) antagonists, systemic corticosteroids equivalent to/greater than 15 mg of prednisone per day, or immunosuppressive drug therapy following organ transplantation
- Persons with silicosis, diabetes mellitus, chronic renal failure, leukemia, or cancer of the head, neck, or lung
- Persons who have had a gastrectomy or jejunioileal bypass
- Persons who weigh less than 90% of their ideal body weight
- Cigarette smokers and persons who abuse drugs and/or alcohol
- Populations defined locally as having an increased incidence of disease due to *M. tuberculosis*, including medically underserved, low-income populations.

Source: Centers for Disease Control and Prevention (CDC), Division of Tuberculosis Elimination. Core Curriculum on Tuberculosis: What the Clinician Should Know: Chapter 2, Table 2.6. Persons at Increased Risk for Progression of LTBI to TB Disease. 6th edition (2013). [https://www.cdc.gov/tb/education/corecurr/pdf/corecurr\\_all.pdf](https://www.cdc.gov/tb/education/corecurr/pdf/corecurr_all.pdf). Accessed March 21, 2022.

Continuing students should be tested only when their activities (e.g., volunteering, conducting research, mentoring, studying abroad, traveling, visiting relatives, employment) involve close contact with individuals in areas with increased incidence of TB whether domestically or internationally and therefore place the student at risk for a new infection, or to meet an academic program requirement. Sponsors of these programs or health care providers caring for these students prior to the activity should educate students of this risk and recommend testing 8 to 10 weeks after leaving the high-incidence area. While it would be welcomed, no evidence-based data exists that identifies the amount of time spent in each high-risk country that constitutes significant exposure. Students should discuss their specific travel circumstances with a health care provider who can determine the appropriate evaluation.<sup>3</sup>

TB screening of all health care personnel (HCP), including health profession students, includes a symptom evaluation and test (IGRA or TST) for those without documented prior TB disease or LTBI and an individual TB risk assessment to help guide decisions when interpreting test results.<sup>4</sup>

## When to Screen and Test

TB screening should occur by questionnaire prior to arrival on campus and in conjunction with verification of pre-matriculation immunization requirements. TB testing of high-risk students should take place no sooner than six months prior to the start of the first term and should be completed by the second term registration.

## How to Test

*Note: See [CDC's Dear Colleague letter on TB Tests and mRNA COVID-19 Vaccines](#), dated January 7, 2021.*

In most situations relevant to college health, the preferred method for testing for TB infection is an interferon- $\gamma$  release assay (IGRA) rather than a tuberculin skin test (TST). A TST is an acceptable alternative, especially in situations where an IGRA is not available, too costly, or too burdensome. Importantly, a TST is **not** recommended

to test for infection in those persons at low risk for TB infection and disease progression. However, if testing of low-risk students is required for administrative reasons, such as health professions program requirements, a confirmatory test is recommended if the initial test result is positive. If the initial positive test was an IGRA, the same IGRA test or a different IGRA test can be done as the confirmatory test. If the initial positive test was a TST, an IGRA is recommended for the confirmatory test. When such testing is performed in low-risk individuals, the person is considered infected only if both tests are positive.

Only two IGRA tests are FDA approved in the US: Quantiferon Gold In-Tube (QFT-GIT) and the T-SPOT.TB (T-Spot). Incoming international students should be screened by their health care provider to make sure they do not have active tuberculosis prior to coming to the US. However, if the student was not screened by an FDA approved IGRA test, it is [recommended](#) the student be screened upon arrival in the U.S.

## What to Do When the IGRA or TST Is Positive

Persons with a positive IGRA or TST must undergo chest radiography and medical examination to exclude active TB disease. For asymptomatic individuals, a posterior-anterior (PA) radiograph of the chest is the standard view used for the detection of TB-related chest abnormalities. In some cases, especially in children, a lateral view may be helpful. In some instances, a computerized tomography (CT) scan may provide additional information.<sup>5</sup> Any findings suggestive of active TB disease warrant further evaluation before treatment decisions can be made. In the absence of active TB disease, the diagnosis of LTBI is made using information gathered from the medical history, IGRA or TST result, chest radiograph, and physical examination.<sup>6</sup>

Note, for immunocompetent and asymptomatic individuals, the PA view chest radiograph is good for two years. If immunocompromised and asymptomatic, the PA view chest radiograph is good for three months. Thus, repeat the chest radiograph prior to starting latent

<sup>3</sup> Centers for Disease Control and Prevention (CDC). Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health-care settings, 2005. MMWR December 2005; 54 (No. RR-17):4-5.

<sup>4</sup> Sosa LE, Njie GJ, Lobato MN, et al. Tuberculosis Screening, Testing, and Treatment of U.S. Health Care Personnel: Recommendations from the National Tuberculosis Controllers Association and CDC, 2019. MMWR Morb Mortal Wkly Rep 2019;68:439-443. DOI: <http://dx.doi.org/10.15585/mmwr.mm6819a3>

<sup>5</sup> CDC. Core Curriculum on Tuberculosis, Sixth Edition, 2013. Chapter 4, p 82. [www.cdc.gov/tb/education/corecurr/pdf/corecurr\\_all.pdf](http://www.cdc.gov/tb/education/corecurr/pdf/corecurr_all.pdf). Accessed March 21, 2022.

<sup>6</sup> CDC. Latent Tuberculosis Infection: A Guide for Primary Health Care Providers. <https://www.cdc.gov/tb/publications/ltni/default.htm>. Accessed March 21, 2022

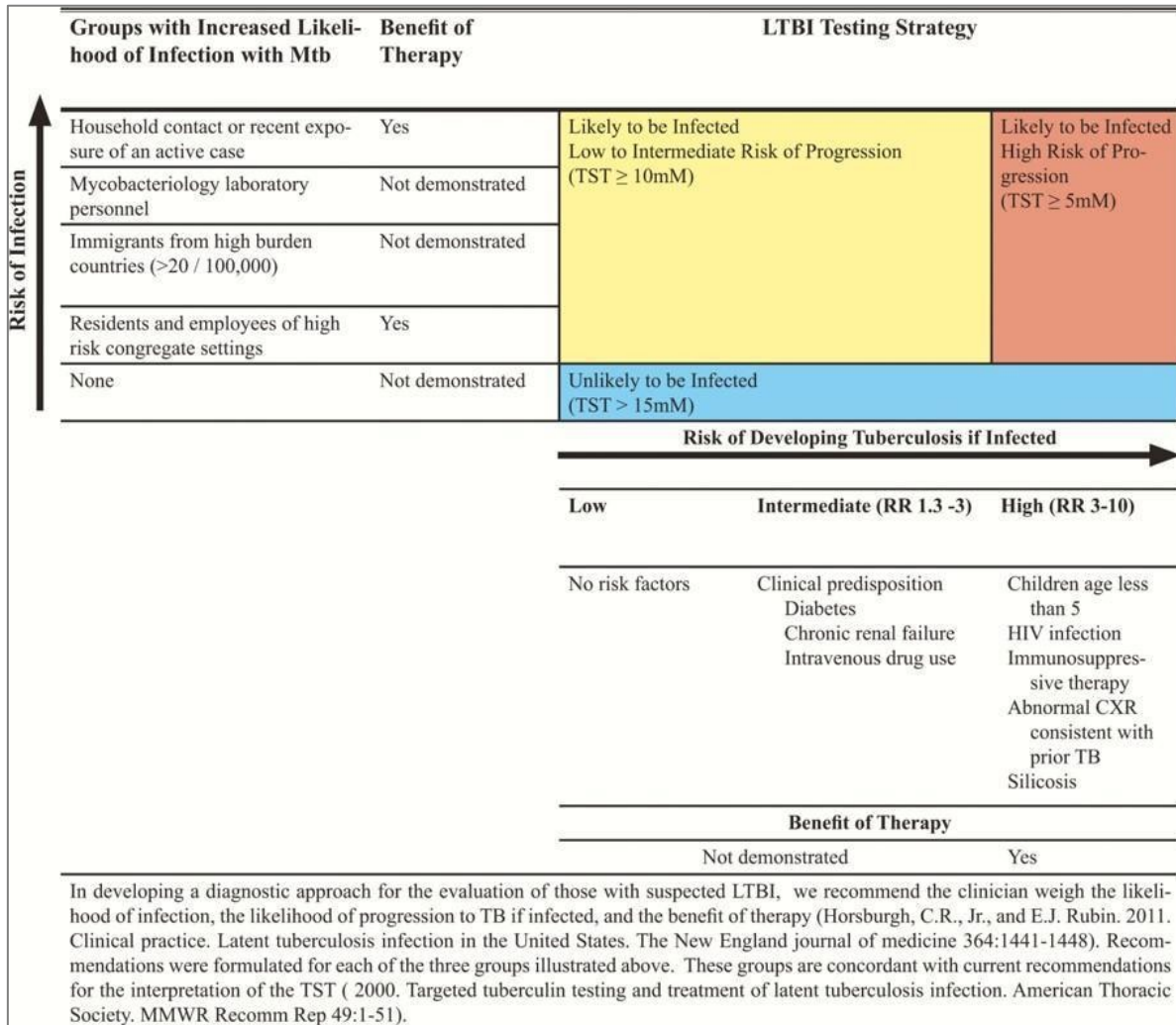
tuberculosis treatment if more than the recommended time above. Also, if an individual develops symptoms, a two view (PA and lateral) chest radiograph is recommended.

### Whether to Treat LTBI

From a public health perspective, treatment of LTBI is essential to controlling and eliminating TB disease in the United States.<sup>7</sup> In deciding whether to recommend

treatment of LTBI to individual patients, the clinician should weigh the likelihood of infection, the likelihood of progression to TB disease if infected, and the benefit of therapy. See ISDA LTBI treatment evaluation paradigm in Figure 1, below, for more information in making this important decision.

Figure 1.



Source: Lewinsohn, DM, et.al. 2017. Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children. Clinical Infectious Diseases, Volume 64, Issue 2, 15 January 2017, Pages e1–e33, <https://doi.org/10.1093/cid/ciw694>

<sup>7</sup> CDC. Core Curriculum on Tuberculosis, Sixth Edition, 2013. Chapter 5, p 111. [www.cdc.gov/tb/education/corecurr/pdf/corecurr\\_all.pdf](http://www.cdc.gov/tb/education/corecurr/pdf/corecurr_all.pdf). Accessed March 21, 2022.

## How to Treat LTBI

Short-course (3- to 4-month) rifamycin-based treatment regimens are preferred over longer-course (6–9 month) isoniazid monotherapy for treatment of LTBI because of their effectiveness, safety, and high treatment completion rates. These preferred regimens include:

- 3 months of isoniazid plus rifapentine given once weekly (directly observed therapy)
- 4 months of rifampin given daily
- 3 months of isoniazid plus rifampin given daily

Note: 6 or 9 months of isoniazid monotherapy is efficacious but has higher toxicity risk and lower treatment completion rates than shorter rifamycin-based regimens. Individual considerations, including comorbidities and medication interactions, should guide treatment decisions.<sup>8</sup>

Once initiated, completion of treatment should be a high priority and should be supported by providing treatment plans and education in the student's primary language, ensuring confidentiality, offering incentives to mark treatment milestones, and case managing by a culturally competent health care provider to build trust and gain buy-in. Post-treatment follow-up should include providing the student with documentation of IGRA or TST results, chest radiograph results, and the dosage and duration of medication treatment. Students who have completed LTBI therapy, as well as those who elected not to take therapy, should be educated regarding signs

and symptoms of TB disease and instructed to seek medical care immediately upon developing any of the signs or symptoms of TB.

## Additional Resources

*Use these resources in addition to any provided in the in addition to footnotes.*

ATS/CDC/IDSA. Treatment of Tuberculosis. MMWR June 2003; 52 (No. RR-11)  
<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5211a1.htm>

Francis J. Curry National Tuberculosis Center. TB Program Manual Template  
<https://www.currytbcenter.ucsf.edu/products/view/tuberculosis-program-manual-template>

Heartland National Tuberculosis Center. Model Tuberculosis Prevention Program for College Campuses. 2nd ed. 2011  
<https://npin.cdc.gov/publication/model-tuberculosis-prevention-program-college-campuses>

## ACHA TB Screening Guidelines Workgroup

These guidelines were prepared originally by ACHA's Tuberculosis Guidelines Task Force and revised by the ACHA Emerging Public Health Threats and Emergency Response Coalition. These guidelines are updated by the Vaccine-Preventable Diseases Committee.



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<sup>8</sup> Sterling TR, Njie G, Zenner D, et al. Guidelines for the Treatment of Latent Tuberculosis Infection: Recommendations from the National Tuberculosis Controllers Association and CDC, 2020. MMWR Recomm Rep 2020;69(No. RR-1):1–11.DOI:  
<http://dx.doi.org/10.15585/mmwr.rr6901a1>.

## Appendix A

### Sample Tool for Institutional Use

#### Part I: Tuberculosis (TB) Screening Questionnaire (to be completed by incoming students)

Please answer the following questions:

Have you ever had close contact with persons known or suspected to have active TB disease?  Yes  No

Were you born in one of the countries or territories listed below that have a high incidence of active TB disease? (If yes, please CIRCLE the country, below.)  Yes  No

Afghanistan	China, Hong Kong SAR	Honduras	Namibia	South Sudan
Algeria	China, Macao SAR	India	Nauru	Sri Lanka
Angola	Colombia	Indonesia	Nepal	Sudan
Anguilla	Comoros	Iraq	Nicaragua	Suriname
Argentina	Congo	Kazakhstan	Niger	Tajikistan
Armenia	Democratic People's Republic of Korea	Kenya	Nigeria	Thailand
Azerbaijan	Democratic Republic of the Congo	Kiribati	Niue	Timor-Leste
Bangladesh	Djibouti	Kyrgyzstan	Northern Mariana Islands	Togo
Belarus	Dominican Republic	Lao People's Democratic Republic	Pakistan	Tokelau
Belize	Ecuador	Latvia	Palau	Tunisia
Benin	El Salvador	Lesotho	Panama	Turkmenistan
Bhutan	Equatorial Guinea	Liberia	Papua New Guinea	Tuvalu
Bolivia (Plurinational State of)	Eritrea	Libya	Paraguay	Uganda
Bosnia and Herzegovina	Eswatini	Lithuania	Peru	Ukraine
Botswana	Ethiopia	Madagascar	Philippines	United Republic of Tanzania
Brazil	Fiji	Malawi	Qatar	Uruguay
Brunei Darussalam	Gabon	Malaysia	Republic of Korea	Uzbekistan
Burkina Faso	Gambia	Maldives	Republic of Moldova	Vanuatu
Burundi	Georgia	Mali	Romania	Venezuela (Bolivarian Republic of)
Côte d'Ivoire	Ghana	Malta	Russian Federation	
Cabo Verde	Greenland	Marshall Islands	Rwanda	
Cambodia	Guam	Mauritania	Sao Tome and Principe	Viet Nam
Cameroon	Guatemala	Mexico	Senegal	Yemen
Central African Republic	Guinea	Micronesia (Federated States of)	Sierra Leone	Zambia
Chad	Guinea-Bissau	Mongolia	Singapore	Zimbabwe
China	Guyana	Morocco	Solomon Islands	
	Haiti	Mozambique	Somalia	
		Myanmar	South Africa	

Source: World Health Organization Global Health Observatory, Tuberculosis Incidence. Countries with average incidence rates of  $\geq 20$  cases per 100,000 population.

Have you resided in or traveled to one or more of the countries or territories listed above for a period of one to three months or more? (If yes, CHECK the countries or territories, above)  Yes  No

Have you been a resident, volunteer, and/or employee of high-risk congregate settings (e.g., correctional facilities, long-term care facilities, and homeless shelters)?  Yes  No

Have you been a volunteer or health care worker who served clients who are at increased risk for active TB disease?  Yes  No

Have you ever been a member of any of the following groups that may have an increased incidence of latent *M. tuberculosis* infection or active TB disease: medically underserved, low-income, or abusing drugs or alcohol?  Yes  No

If you answered YES to any of the above questions, [insert your college/university name] [recommends or requires] that you receive TB testing prior to the start of your first enrolled term). The significance of any travel exposure should be reviewed with a health care provider.

If the answer to all the above questions is NO, no further testing or further action is required.

## Part II. Clinical Assessment by Health Care Provider

Clinicians should review and verify the information in Part I. Persons answering YES to any of the questions in Part I are candidates for either Mantoux tuberculin skin test (TST) or Interferon Gamma Release Assay (IGRA) unless a previous positive test has been documented.

History of a positive TB skin test or IGRA blood test? (If yes, document below) Yes \_\_\_\_\_ No \_\_\_\_\_

History of BCG vaccination? (If yes, consider IGRA if possible.) Yes \_\_\_\_\_ No \_\_\_\_\_

### 1. TB Symptom Check

Does the student have signs or symptoms of active pulmonary tuberculosis disease? Yes \_\_\_\_\_ No \_\_\_\_\_

If no, proceed to 2 or 3.

If yes, check below:

- |  |  |
|--|--|
| <input type="checkbox"/> Cough (especially if lasting for 3 weeks or longer) with or without sputum production | <input type="checkbox"/> Loss of appetite        |
| <input type="checkbox"/> Coughing up blood (hemoptysis)  | <input type="checkbox"/> Unexplained weight loss |
| <input type="checkbox"/> Chest pain  | <input type="checkbox"/> Night sweats            |
|  | <input type="checkbox"/> Fever                   |

Proceed with additional evaluation to exclude active tuberculosis disease including chest x-ray (PA and lateral) and sputum evaluation as indicated.

### 2. Interferon Gamma Release Assay (IGRA)

Date Obtained: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ (specify method) QFT T-Spot other \_\_\_\_\_  
M D Y

Result: negative \_\_\_\_\_ positive \_\_\_\_\_ indeterminate \_\_\_\_\_ borderline \_\_\_\_\_ (T-Spot only)

Date Obtained: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ (specify method) QFT T-Spot other \_\_\_\_\_  
M D Y

Result: negative \_\_\_\_\_ positive \_\_\_\_\_ indeterminate \_\_\_\_\_ borderline \_\_\_\_\_ (T-Spot only)

### 3. Tuberculin Skin Test (TST)

(TST result should be recorded as actual millimeters (mm) of induration, transverse diameter; if no induration, write "0". The TST interpretation should be based on mm of induration as well as risk factors.)\*\*

Date Given: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ Date Read: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
M D Y M D Y

Result: \_\_\_\_\_ mm of induration \*\*Interpretation: positive \_\_\_\_\_ negative \_\_\_\_\_

Date Given: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ Date Read: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
M D Y M D Y

Result: \_\_\_\_\_ mm of induration \*\*Interpretation: positive \_\_\_\_\_ negative \_\_\_\_\_

**\*\*Interpretation guidelines:**

>5 mm is positive:	<ul style="list-style-type: none"> <li>• Recent close contacts of an individual with infectious TB</li> <li>• Persons with fibrotic changes on a prior chest x-ray, consistent with past TB disease</li> <li>• Organ transplant recipients and other immunosuppressed persons (including receiving equivalent of &gt;15 mg/d of prednisone for &gt;1 month.)</li> <li>• HIV-infected persons</li> </ul>
>10 mm is positive:	<ul style="list-style-type: none"> <li>• Foreign born or travelers to the U.S. from high prevalence areas or who resided in one for a significant* amount of time</li> <li>• Injection drug users</li> <li>• Mycobacteriology laboratory personnel</li> <li>• Residents, employees, or volunteers in high-risk congregate settings</li> <li>• Persons with medical conditions that increase the risk of progression to TB disease including silicosis, diabetes mellitus, chronic renal failure, certain types of cancer (leukemias and lymphomas, cancers of the head, neck, or lung), gastrectomy or jejunioileal bypass and weight loss of at least 10% below ideal body weight</li> </ul> <p><i>*The significance of the travel exposure should be discussed with a health care provider and evaluated.</i></p>
>15 mm is positive:	<ul style="list-style-type: none"> <li>• Persons with no known risk factors for TB who, except for certain testing programs required by law or regulation, would otherwise not be tested.</li> </ul>

**4. Chest x-ray:** (Required if IGRA or TST is positive. Note: a single PA view is indicated in the absence of symptoms.)

Date of chest x-ray: \_\_\_\_/\_\_\_\_/\_\_\_\_                      Result: normal \_\_\_\_ abnormal \_\_\_\_  
M                      D                      Y

**Part III. Considerations for Treatment of LTBI**

In deciding whether to recommend treatment of LTBI to individual patients, the clinician should weigh the likelihood of infection, the likelihood of progression to active tuberculosis infection, and the benefit of therapy. Students in the following groups are at increased risk of progression from LTBI to active TB disease and should be prioritized to begin treatment as soon as possible.

- Infected with HIV
- Recently infected with *M. tuberculosis* (within the past 2 years)
- History of untreated or inadequately treated TB disease, including persons with fibrotic changes on chest radiograph consistent with prior TB disease
- Receiving immunosuppressive therapy such as tumor necrosis factor-alpha (TNF) antagonists, systemic corticosteroids equivalent to/greater than 15 mg of prednisone per day, or immunosuppressive drug therapy following organ transplantation
- Diagnosed with silicosis, diabetes mellitus, chronic renal failure, leukemia, or cancer of the head, neck, or lung
- Have had a gastrectomy or jejunioileal bypass
- Weigh less than 90% of their ideal body weight
- Cigarette and e-cigarette smokers and persons who abuse drugs and/or alcohol

**END OF SAMPLE FORM**

If reproduced for use by a college or university health center, please insert your health center’s contact information. You are encouraged to modify the form to suit your needs or requirements. This form should not be returned to ACHA.



## Appendix B

### Decoding Incidence Rates for TB Testing

*Originally published in the Summer 2022 issue of College Health In Action; updated April 2023*

For many years, ACHA has published recommendations related to tuberculosis screening and testing. Institutions are encouraged to screen for tuberculosis (TB) infection, especially in students who are at increased risk, as this is a key strategy for controlling and preventing infection on college and university campuses. An ACHA workgroup including members with expertise in infection control and epidemiology develops the recommendations and reviews them annually. The document *ACHA Guidelines for Tuberculosis Screening and Targeted Testing of College and University Students* is available at [www.acha.org/guidelines](http://www.acha.org/guidelines).

In brief, the guidelines encourage institutions to screen all incoming students for tuberculosis risk factors (the screening component), and then to test for infection in students determined to be at increased risk (the testing component). Current U.S. Centers for Disease Control and Prevention (CDC) guidelines list several populations at increased risk for TB infection, including foreign-born persons from areas that have a high incidence of active TB disease. Accordingly, the ACHA workgroup uses the annual incidence rate of tuberculosis disease in a student's home country (often defined in institutional registration systems as county of citizenship) as an indicator for risk of TB infection at matriculation. It's important to understand that this is only a rough proxy for estimating risk; it's not a statistical association. Annual TB incidence by country is also a data point that is readily available and published by the World Health Organization (WHO).

To determine the appropriate incidence rate to use as a cutoff for testing, the workgroup reviewed the literature and guidance from CDC, WHO, and others, and settled on an incidence rate of 20 cases per 100,000 population to define "high incidence" countries. Students arriving from countries with an incidence rate equal to or higher than 20.0/100k should be tested, and students from countries below that figure would not need to be tested. However, this rate cutoff should be recognized as being somewhat arbitrary in its application as an indicator of "high risk."

Complicating the use of incidence rates as a marker for risk is that in any given year a country could be just above or below the cutoff, and it could change from year to year. To smooth out some of the variation, the workgroup adopted a method to use a three-year moving average of incidence rates to determine which countries should be deemed high risk.

Use of this specific rate as a cutoff should not be considered an absolute. Some institutions may elect to use a different figure to reflect local conditions. For example, institutions that have diagnosed tuberculosis in students from countries deemed "low risk" may decide to include that country on its high-risk list. Also, for simplicity, some institutions may choose to test all international students regardless of their country of origin. This strategy, however, would potentially include students with a very low risk for TB infection, which could lead to false positive results, a situation that can be distressing to the student and create unnecessary administrative burden for the institution. As a basis for comparison, the TB incidence rate for the United States in 2020 as reported by WHO was 2.4 cases/100k population. A list of high incidence countries is included in Appendix A of the *ACHA Guidelines for Tuberculosis Screening and Targeted Testing of College and University Students* and is updated annually.



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