

Adult TB Risk Assessment User Guide

Avoid testing persons at low risk

Routine testing of low risk populations is not recommended and may result in unnecessary evaluations and treatment because of falsely positive test results.

Prioritize persons with risks for progression

If health system resources do not allow for testing of all persons who are born, traveled, or have lived in a country with an elevated TB rate for at least one month, prioritize patients with at least one of the following medical risks for progression:

- diabetes mellitus
- smoker within the last year
- end stage renal disease
- leukemia or lymphoma
- silicosis
- cancer of head or neck
- intestinal bypass/gastrectomy
- chronic malabsorption
- body mass index ≤ 20
- history of chest x-ray findings suggestive of previous or inactive TB (no prior treatment). Includes fibrosis or non-calcified nodules, but does not include solitary calcified nodule or isolated pleural thickening. In addition to LTBI testing, evaluate for active TB disease.

While immunosuppression does increase the risk of disease progression, it does not increase the risk of TB exposure.

United States Preventive Services Task Force (USPSTF)

The USPSTF has recommended testing persons born-in or former residents of a country with an elevated tuberculosis rate and persons who live in or have lived in high-risk congregate settings such as homeless shelters and correctional facilities. Because the increased risk of exposure to TB in congregate settings varies substantially by facility and local health jurisdiction, clinicians are encouraged to follow local recommendations when considering testing among persons from these congregate settings. The USPSTF did not review data supporting testing among close contacts to persons with infectious TB or among persons who are immunosuppressed because these persons are recommended to be screened by public health programs or by clinical standard of care. Screening Recommendations are available on the USPSTF website. <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/latent-tuberculosis-infection-screening>

Local recommendations

Local TB control programs and clinics can customize this risk assessment according to local recommendations. **Providers should check with local TB control programs for more information.** Local health jurisdictions contact information can be found on the online at:

<https://www.doh.wa.gov/AboutUs/PublicHealthSystem/LocalHealthJurisdictions>

Mandated testing and other risk factors

Several risk factors for TB that have been used to select patients for TB screening historically or in mandated programs are not included among the components of this risk assessment. This is purposeful in order to focus testing on patients at highest risk. However, certain populations may be mandated for testing by statute, regulation, or policy. This risk assessment does not supersede any mandated testing. Examples of these populations include: healthcare workers, residents or employees of correctional institutions, substance abuse treatment facilities, homeless shelters, and others.

Age as a factor

Age (among adults) is not considered in this risk assessment. However, younger adults have more years of expected life during which progression from latent infection to active TB disease could develop.

Children

This risk assessment tool is intended for adults. A risk assessment tool, created for use in children, is available here: <https://www.doh.wa.gov/Portals/1/Documents/Pubs/343-145-PediatricTBRiskAssessment.pdf>

Foreign travel

Travel to countries with an elevated TB rate may be a risk for TB exposure in certain circumstances (e.g. extended duration, likely contact with an infectious TB patient, high prevalence of TB in travel location, non-tourist travel). The duration of at least one consecutive month to trigger testing is intended to identify travel most likely to involve TB exposure. TB screening tests can be falsely negative within eight weeks after exposure, so are best obtained eight weeks after the last exposure, or return from travel.

Adult TB Risk Assessment User Guide — *continued*

When to repeat a test

Re-testing should only be done in persons who previously tested negative, and have new risk factors since the last assessment. In general, this would include new close contact with an infectious TB case or new immunosuppression, but could also include foreign travel in certain circumstances.

When to repeat a risk assessment

The risk assessment should be administered at least once. Persons can be screened for new risk factors at subsequent preventive health visits.

IGRA preference in BCG vaccinated

Because IGRA has increased specificity for TB infection in persons vaccinated with BCG, IGRA is preferred over the TST in these persons. Most persons born outside the United States have been vaccinated with BCG.

Previous or inactive tuberculosis

Chest radiograph findings consistent with previous or inactive TB include fibrosis or non-calcified nodules, but do not include a solitary calcified nodule or isolated pleural thickening. Persons with a previous chest radiograph showing findings consistent with previous or inactive TB should be tested for LTBI. In addition to LTBI testing, evaluate for active TB disease.

Negative test for LTBI does not rule out active TB disease

It is important to remember that a negative TST or IGRA result does not rule out active TB disease. Any suspicion for active TB disease or extensive exposure to TB should prompt an evaluation for active TB disease, including physical exam, symptom review, and 2-view chest x-ray.

Symptoms that should trigger evaluation for active TB disease

Patients with any of the following symptoms that are otherwise unexplained should be evaluated for active TB disease: cough for more than 2-3 weeks, fevers, night sweats, weight loss, hemoptysis.

Most patients with LTBI should be treated

Most patients with LTBI should be treated. Persons with risk factors who test positive for LTBI should generally be treated once active TB disease has been ruled out with a physical exam, chest radiograph and, if indicated, sputum smears, cultures, and nucleic acid amplification testing (NAAT). However, clinicians should not feel compelled to treat persons who have no risk factors but have a positive test for LTBI. A helpful online resource to assess an adult's risk of progression to disease based on screening results and risk factors is: <http://www.tstin3d.com/>

Emphasis on short course for treatment of LTBI

Shorter regimens for treating latent TB infection have been shown to be as effective as 9 months of isoniazid, and are more likely to be completed. Use of these shorter regimens is preferred in most patients. Drug-drug interactions and contact to drug resistant TB are typical reasons these regimens cannot be used.

Shorter duration LTBI treatment regimens

Medication*	Frequency	Duration
Rifampin	Daily	4 months
Isoniazid + rifapentine	Weekly	12 weeks

* 11-12 doses in 16 weeks required for completion.

For more information, refer to *LTBI Treatment Guidance in Washington State* and one-page *LTBI Treatment Quick Reference Sheet* found online at: <https://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/Tuberculosis/TBProviderToolkit> Have questions or need consultation on a LTBI or TB patient? TB ECHO® is a weekly videoconference meeting for healthcare professionals to get TB education, consultation, and mentoring. Learn more at: www.doh.wa.gov/TBECHO.

Patient refusal of recommended LTBI treatment

Refusal should be documented. Recommendations for treatment should be made at future encounters with medical services. If treatment is later accepted, TB disease should be excluded and CXR repeated if it has been more than 6 months from the initial evaluation; or more than 3 months if there is immunosuppression, or the prior CXR was abnormal and consistent with potentially active TB disease.

Pediatric TB Risk Assessment User Guide

Avoid testing persons at low risk

Routine testing of low risk populations is not recommended and may result in unnecessary evaluations and treatment because of falsely positive test results.

Local recommendations, mandated testing & risk factors

Several risk factors for TB that have historically been used to select children for TB screening, or in mandated programs, are not included among the components of this risk assessment. This is purposeful in order to focus testing on children at highest risk. However, certain populations may be mandated for testing by statute, regulation, or policy. This risk assessment does not supersede any mandated testing. Testing can also be considered in children with frequent exposure to adults at high risk of TB infection, such as those with extensive foreign travel in areas with high TB rates. Local TB control programs and clinics can customize this risk assessment according to local recommendations. **Providers should check with local TB control programs for more information.** Local health jurisdictions contact information can be found on the online at: <https://www.doh.wa.gov/AboutUs/PublicHealthSystem/LocalHealthJurisdictions>

Most patients with LTBI should be treated

Most patients with LTBI should be treated. Persons with risk factors who test positive for LTBI should generally be treated once active TB disease has been ruled out with a physical exam, chest radiograph and, if indicated, sputum smears, cultures, and nucleic acid amplification testing (NAAT). However, clinicians should not feel compelled to treat persons who have no risk factors but have a positive test for LTBI.

When to repeat a risk assessment and testing

Risk assessments should be completed for new patients, patients with new potential exposures to TB since last assessment, and during routine pediatric well-child visits. Repeat risk assessments should be based on the activities and risk factors specific to the child. High-risk children who frequent health care settings might require annual testing and should be considered separately. People who volunteer or work in health care settings might require annual testing and should be considered separately. Re-testing should only be done in persons who previously tested negative and have new risk factors since the last assessment. In general new risk factors would include new close contact with an infectious TB case or new immunosuppression, but could also include foreign travel.

Immunosuppression

While immunosuppression does increase the risk of disease progression, it does not increase the risk of TB exposure. The exact level of immunosuppression that predisposes a person to increased risk for TB progression is unknown. The threshold of steroid dose and duration used in the Pediatric TB Risk Assessment are based on data in adults and in accordance with Advisory Committee on Immunization Practices recommendations for live vaccines in

children receiving immunosuppression.

Foreign travel or residence

Travel or residence in countries with an elevated TB rate may be a risk for TB exposure in certain circumstances (e.g., extended duration, likely contact with persons with infectious TB, high prevalence of TB in travel location, non-tourist travel). The duration of at least one consecutive month to trigger testing is intended to identify travel most likely to involve TB exposure. TB screening tests can be falsely negative within eight weeks after exposure, so are best obtained eight weeks after the last exposure, or return from travel.

IGRA preference in non-U.S.-born children ≥ 2 years old

Since IGRA has increased specificity for TB infection in children vaccinated with BCG, IGRA is preferred over the tuberculin skin test for non-U.S.-born children ≥ 2 years of age. IGRAs can be used in children < 2 years of age. In BCG vaccinated, immunocompetent children with a positive TST, it may be appropriate to confirm a positive TST with an IGRA. If IGRA is not done the TST result should be considered the definitive result.

Negative test for LTBI does not rule out active TB

It is important to remember that a negative TST or IGRA result does not rule out active TB disease. Any suspicion for active TB disease or extensive exposure to TB should prompt an evaluation for active TB disease, including physical exam, symptom review, and 2-view chest x-ray.

Emphasis on short course treatment regimens for LTBI

Shorter regimens for treating latent TB infection have been shown to be as effective as 9 months of isoniazid, and are more likely to be completed. Recent literature suggests that two shorter LTBI regimens (daily rifampin for 4 months and once-weekly isoniazid and rifapentine [3HP] for 12 weeks) have higher rates of treatment completion and lower rates of side effects, especially drug-induced hepatitis. The choice between rifampin daily for 4 months, vs. INH and rifapentine once weekly for 12 weeks depends on the patient's and medical provider's preference.

The American Academy of Pediatrics considers any of the three regimen options adequate, depending on the circumstances for individual patients. Most experts consider 3HP to be the preferred regimen for treatment of LTBI for children 2 years and older. However, 3HP is not recommended for children under 2 years old because the safety and pharmacokinetics of rifapentine have not been established for this age group. Consider the use of Isoniazid in children under 2 years of age.

For more information, refer to the *LTBI Treatment Guidance in Washington State* and one-page *LTBI Treatment Quick Reference Sheet* online at: <https://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/Tuberculosis/TBProviderToolkit> Have questions or need consultation on a LTBI or TB patient? TB ECHO® is a weekly videoconference

meeting for healthcare professionals to get TB education, consultation, and mentoring. Learn more at: www.doh.wa.gov/TBECHO.

Refusal of recommended LTBI treatment

Refusal should be documented. Recommendations for treatment should be made at future encounters with medical services. If treatment is later accepted, TB disease should be excluded and chest x-ray repeated if it has been more than 3 months from the initial evaluation.

Symptoms that should trigger evaluation for active TB

Patients with any of the following symptoms that are otherwise unexplained should be evaluated for active TB disease: cough for more than 2-3 weeks, fevers, night sweats, weight loss, lymphadenopathy, hemoptysis or excessive fatigue.

Resource

American Academy of Pediatrics, Red Book Online, Tuberculosis is available online at: <https://redbook.solutions.aap.org/chapter.aspx?sectionid=189640207&bookid=2205>