



# California Adult Tuberculosis Risk Assessment



Despite being preventable, tuberculosis (TB) disease continues to cause significant suffering and death in the state of California. Even with modern treatments, more than [1 in 6 Californians with TB die](https://bit.ly/cdc_tbca_data) (bit.ly/cdc\_tbca\_data). TB is also a health disparity in California, with a disproportionate impact on people born outside the United States. **Identifying and treating persons with latent TB infection (LTBI) is the most promising tool to prevent TB disease.**

- Use this tool to identify asymptomatic adults for LTBI testing.
- Do not treat for LTBI until active TB disease has been excluded.
- A negative tuberculin skin test or interferon gamma release assay does not rule out active TB disease.

If a patient has symptoms of TB disease, including cough (for more than 2 weeks), fevers, night sweats, unexplained weight loss, or an abnormal chest x-ray consistent with TB disease, they should undergo further workup. **Contact your [local TB control program](https://www.ctca.org/locations.html) (https://www.ctca.org/locations.html) if there is suspicion for active TB disease.**

## LTBI testing is recommended if any of the boxes below are checked.

Only repeat TB testing if there is a new risk factor since last screening

- Birth, travel, or residence** in a country with an elevated TB rate\* for at least 1 month  
Interferon Gamma Release Assay (IGRA) is preferred over Tuberculin Skin Test (TST), especially for non-U.S.-born persons
- Immunosuppression**, current or planned  
HIV infection, organ transplant recipient, treated with biologic agents including TNF-alpha antagonist (e.g., infliximab, adalimumab, etanercept, others), steroids (equivalent of prednisone  $\geq 15$  mg/kg/day for  $\geq 1$  month) or other immunosuppressive medication
- Close contact** to someone with infectious TB disease during lifetime
- Homelessness or incarceration**, current or past  
Persons experiencing homelessness or residing in high-risk congregate settings including homeless shelter or correctional facility during lifetime

## Treat for LTBI if LTBI test result is positive and active TB disease is excluded.

- None**; no TB testing is indicated at this time.

For more information about using this tool and for the most current version, go the [TB Risk Assessment page](https://cdph.ca.gov/tbriskassessment) (cdph.ca.gov/tbriskassessment).

### \*Countries with elevated TB Risk

This includes many countries in Asia, Africa, Central America, Eastern Europe, Mexico, the Middle East, and South America. "Elevated TB rate" is defined as greater than or equal to 10 TB cases per 100,000 persons by [National TB Controllers Association](https://bit.ly/tbcontrollers) (bit.ly/tbcontrollers). The World Health Organization (WHO) maintains a list of country-specific annual TB incidence in its [Global Tuberculosis Report](https://bit.ly/who-globaltb-data) (bit.ly/who-globaltb-data), as well as a [searchable TB country profile](#) based on these data (bit.ly/worldhealthorg\_data). A quick approximation is to consider all countries outside of the United States, Canada, Australia, New Zealand, and countries in western and northern Europe to have "elevated" TB rates.



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## Avoid testing persons at low risk

Routine testing of persons without risk factors is not recommended and may result in unnecessary evaluations and treatment because of falsely positive test results.

## Most patients with LTBI should be treated

Most persons with risk factors and a positive IGRA or TST should be treated for LTBI after active TB disease has been excluded. Evaluation for active TB includes physical exam, symptom screen, chest x-ray and if indicated, sputum collection.

## Local recommendations

Local recommendations and mandates should also be considered in testing decisions. Local TB control programs can customize this risk assessment. **Providers should check with local TB control programs for local recommendations.** A directory of TB Control Programs is available on the [CTCA website](https://www.ctca.org/locations.html) (<https://www.ctca.org/locations.html>).

## Mandated testing and other risk factors

This risk assessment is designed to test patients at highest risk in a primary care setting. However, certain other 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, employees of correctional institutions, long term care facilities and others.

## Congregate settings

Residing in a congregate setting such as a homeless shelter or correctional facility (including prisons, immigration detention centers, and county jails) may increase risk of exposure to TB, but risk varies substantially based on setting. Many congregate settings in California have mandated TB testing upon entry but not all persons receive LTBI treatment. In a primary care setting, we encourage primary care providers to inquire about history of residing in homeless shelter, correctional or detention setting in the patients' lifetime, think about TB exposure (taking local recommendations into consideration), and test for and treat LTBI, if not previously treated.

## Prioritize persons with risks for progression to active TB disease

If health system resources do not allow for testing of all persons from a country with an elevated TB rate, prioritize patients with at least one of the following medical risks for progression:

- diabetes mellitus
- smoker within past 1 year
- end stage renal disease
- leukemia or lymphoma
- silicosis
- cancer of head or neck
- intestinal bypass/gastrectomy
- chronic malabsorption
- body mass index  $\leq 20$
- 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.

## 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 to active TB disease could develop. Some programs or clinicians may prioritize testing of younger non-U.S.-born persons when all non-U.S.-born are not tested. There is no evidence-based guidance on an upper age limit for LTBI testing, but LTBI testing and treatment may be appropriate for older adults depending on individual patient TB risks, comorbidities, and life expectancy.

## Children

This risk assessment tool is intended for adults. A risk assessment tool created for use in California for children is available on the [TBCB Risk Assessment page](https://www.cdph.ca.gov/tbriskassessment) ([cdph.ca.gov/tbriskassessment](https://www.cdph.ca.gov/tbriskassessment)).

## Travel outside the United States

Travel to countries with an elevated TB rate may be a risk for TB exposure, with risk being highest in circumstances such as work in healthcare facilities, prisons, or refugee camps; extended duration in a location with high prevalence of TB; or likely contact with persons with infectious TB. The duration of at least one consecutive month to trigger testing is



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intended to identify travel most likely to involve TB exposure. **Tests for TB infection can be falsely negative within the 8 weeks after exposure, so are best obtained at least 8 weeks after return from travel.**

### IGRA preference in non-U.S.-born adults

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

### Chest x-rays suggesting previous or inactive TB

In asymptomatic patients, findings such as fibrosis or non-calcified nodules on chest x-ray often represent previous or inactive TB but are sometimes associated with active TB disease and should prompt sputum collection. A solitary calcified nodule or isolated pleural thickening alone do not require additional workup.

### 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. In fact, a negative TST or IGRA in a patient with active TB disease can be a sign of extensive disease and poor outcome.

### When to repeat a risk assessment and testing

The risk assessment should be administered at least once. Persons can be screened for new risk factors at subsequent preventive health visits. 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 extended travel or residence outside the United States.

### 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, and hemoptysis.

### How to evaluate for active TB disease

Evaluate for active TB disease with a chest x-ray and symptom screen. If patient has symptoms consistent with active TB disease, and/or abnormal chest x-ray, sputum acid fast bacilli (AFB) smears, cultures and nucleic acid amplification testing are likely indicated. If sputa are collected, do not treat for LTBI until cultures are finalized. A negative tuberculin skin test or interferon gamma release assay does not rule out active TB disease.

### Emphasis on 3 or 4 month regimens for treating LTBI

Three or four-month rifamycin-based 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.

### LTBI treatment regimens

CDC recommends the following three LTBI regimens as preferred for most patients. Please see [CDC LTBI guidelines](#) (<https://www.cdc.gov/tb/topic/treatment/ltbi.htm>) for dosages and clinical considerations in choosing a regimen.

Medication	Frequency	Duration
Rifampin	Daily	4 months
Isoniazid + rifapentine	Weekly	12 weeks
Isoniazid + rifampin	Daily	3 months

CDC dosing for isoniazid and rifapentine: [LTBI Treatment Infographic](#) ([bit.ly/cdc-ltbitreatment](http://bit.ly/cdc-ltbitreatment)).

### Patients who decline LTBI treatment

If patient declines recommended LTBI treatment, this should be documented. Recommendations for treatment should be made at future encounters. If treatment is later accepted, TB disease should be excluded and chest x-ray (CXR) repeated if it has



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been more than 6 months from the initial evaluation; or more than 3 months if there has been recent close contact to someone with infectious TB, in patients with immunosuppression, or if the prior CXR was abnormal and consistent with potentially active TB disease.

## Resources

Fact Sheets for LTBI Regimens, Isoniazid+Rifapentine, Rifampin, and Isoniazid are available on the [TBCB LTBI Treatment page](http://www.cdph.ca.gov/LTBITreatment) ([www.cdph.ca.gov/LTBITreatment](http://www.cdph.ca.gov/LTBITreatment)).

- CDC [LTBI Provider Resources](http://bit.ly/tbi_provider_resource) ([bit.ly/tbi\\_provider\\_resource](http://bit.ly/tbi_provider_resource))
- California Department of Public Health [Tuberculosis Control Data and Resources](http://bit.ly/tb_control_data). ([bit.ly/tb\\_control\\_data](http://bit.ly/tb_control_data))
- National TB Controllers Association's [Testing and Treatment of Latent Tuberculosis Infection in the United States: Clinical Recommendations](http://bit.ly/tbi_recommendations) ([bit.ly/tbi\\_recommendations](http://bit.ly/tbi_recommendations))
- U.S. Preventive Services Task Force Latent TB Infection Screening Recommendations are available on the [U.S. Preventive Services Task Force website](http://bit.ly/us_preventive_service) ([bit.ly/us\\_preventive\\_service](http://bit.ly/us_preventive_service))

## Abbreviations

BCG= Bacillus Calmette-Guérin  
IGRA=interferon gamma release assay LTBI= latent TB infection  
TST= tuberculin skin test