

Case Management for Latent TB Infection



TABLE OF CONTENTS

Click title of document to view

Training Overview

Agenda

Learning Objectives

TB Nurse Case Management Core Competencies Addressed

Supplemental Materials

Latent TB Infection Testing and Treatment: Summary of U.S. Recommendations - CDC Resource

Tuberculin Skin Testing - CDC Resource

Latent Tuberculosis Infection Treatment Regimens - CDC Resource

Determining LTBI Treatment Completion

Links to LTBI Products/Tools

AGENDA

All times are listed in Pacific Standard Time

12:30-12:35 PM	Welcome and Introductions Moderator: Lisa True, RN, MS, Nurse Consultant
12:35-1:15 PM	Diagnosing Latent TB infection Brenda Montoya Denison, MPH, BSN, RN, Presbyterian Healthcare Services
1:15-2:00 PM	Treating Latent TB Infection Middy Tilghman, NP, Family Nurse Practitioner, One Community Health
2:00-2:30 PM	LTBI Case Scenarios Brenda Montoya Denison and Middy Tilghman
2:30-2:45 PM	Panel Q&A and Wrap-Up Allison Phillips, DNP, APRN, NP-C, San Francisco Tuberculosis Clinic, and Brenda Montoya Denison and Middy Tilghman

LEARNING OBJECTIVES



By the end of this training, participants will be able to:

- conduct risk assessment screening to identify individuals at risk for latent TB infection (LTBI) and disease progression
- describe the diagnostic tests for LTBI including rationale for test selection and interpretation of result
- describe the impact of BCG vaccination on TB testing
- identify the recommended regimens for treating LTBI
- describe baseline evaluations that should be performed prior to LTBI treatment initiation
- list common side effects to assess for throughout LTBI treatment and criteria for determining when to stop/hold treatment and refer patient for further evaluation

TB NURSE CASE MANAGEMENT CORE COMPETENCIES

This module supports the development of the following TB case management core competencies:

DOMAIN 1: Assessment & analytical skills - *Essential knowledge & clinical skills:*

- Determine risk factors for TB exposure, infection and progression to TB disease
- Determine when it is appropriate to test, which test to use, rationale for test selection and interpretation of result
- Understand the impact of BCG vaccination on TB testing
- Identify available LTBI treatment regimens
- Monitor for and recognize medication side effects during treatment for LTBI
- Take appropriate steps to stop/hold treatment and refer for further evaluation when indicated

DOMAIN 3: Education and Communication. *Educational Content Areas:*

- Incorporate the following messages into educational offerings:
 - Review how TB transmission occurs
 - Define TB infection
 - Describe disease prevention through the treatment of TB infection

LATENT TB INFECTION TESTING AND TREATMENT: SUMMARY OF U.S.
RECOMMENDATIONS (page 1/4)

LATENT TB INFECTION



TESTING + TREATMENT

SUMMARY OF U.S. RECOMMENDATIONS



Eliminating tuberculosis (TB) in the United States requires expanding testing and treatment of latent TB infection.

The Centers for Disease Control and Prevention (CDC) and the U.S. Preventive Services Task Force (USPSTF) recommend testing people that are at increased risk for TB infection. Clinicians, health care agencies, and community organizations, especially those serving populations at risk, have a critical role in TB elimination.

LATENT TB INFECTION TESTING AND TREATMENT: SUMMARY OF U.S. RECOMMENDATIONS (page 2/4)

WHO SHOULD BE TESTED FOR TB INFECTION?



CDC and the USPSTF recommend testing populations that are at increased risk for TB infection.



Anyone can get TB. However, some people have a higher risk of getting infected with TB bacteria. CDC supports the USPSTF recommendation to test certain groups at risk for TB infection. These groups include:

- People who were born in or who frequently travel to countries where TB disease is common, including Mexico, the Philippines, Vietnam, India, China, Haiti, Guatemala, or other countries with high rates of TB. *(In general, people born in Canada, Australia, New Zealand, western European countries, or northern European countries are not considered at high risk for TB infection unless they spent time in a country with a high rate of TB.)*
- People who currently live or used to live in large group settings where TB is more common, such as homeless shelters, prisons, or jails.



CDC also recommends testing for TB infection for other groups at risk. These groups include:

- **Health care workers** and others who work in places with high risk for TB transmission, such as hospitals, homeless shelters, correctional facilities, nursing homes, and residential homes for those with HIV.
- Anyone who has spent time with a person who has infectious TB disease.



Children, especially those under age 5, have a higher risk of developing TB disease once infected. Therefore, testing for TB infection in children is important if they are in one of the risk groups noted to the right.



Some people with weaker immune systems, such as those with certain health conditions or who take certain medications, have a higher risk of developing TB disease once infected. Testing for TB infection should be part of their regular medical care. Health conditions that increase a person's risk of developing TB disease once infected include:

- HIV infection
- Recent infection with *M. tuberculosis* (within the last two years)
- History of untreated or inadequately treated TB disease
- Medical treatments that suppress the immune system (such as tumor necrosis factor-alpha [TNF] antagonists, corticosteroids, or drug therapy following organ transplants)
- Silicosis; chronic renal failure; leukemia; or cancer of the head, neck, or lung
- Diabetes mellitus
- A gastrectomy or jejunioileal bypass
- Low body weight (<90% of ideal body weight)
- Substance use (such as injection drug use)



LATENT TB INFECTION TESTING AND TREATMENT: SUMMARY OF U.S. RECOMMENDATIONS (page 3/4)

RECOMMENDED TESTS FOR TB INFECTION:



*Testing for TB infection should be a routine and integral part of health care for patients with increased risk for TB. Health care providers are encouraged to use newer **TB blood tests** to screen for TB infection.*



There are two kinds of tests that are used to determine if a person has been infected with TB bacteria: the TB blood test and the TB skin test.



TB Blood Tests (Interferon Gamma Release Assays [IGRAs])

TB blood tests (sometimes called IGRAs) use a blood sample to find TB infection. The tests measure the response of TB proteins when they are mixed with a small amount of blood. Only one visit is required to draw blood for the test.

TB blood tests are the preferred method of TB testing for people 5 years of age and older who have received the bacille Calmette-Guérin (BCG) vaccine.



TB Skin Test (TST)

The TB skin test is also called the Mantoux tuberculin skin test (TST). With a TB skin test, a health care provider injects a small amount of testing fluid (called tuberculin or PPD) into the skin on the lower part of the arm.

After 2-3 days, the skin test reaction must be examined by a trained health care worker. The health care worker measures any swelling where the tuberculin was injected to determine if the reaction to the test is positive or negative.

TB skin tests are an acceptable alternative in situations where a TB blood test is not available, is too costly, or is too burdensome.



A positive reaction to a TB blood test (IGRA) or TB skin test (TST) usually means TB infection. More tests, such as a chest x-ray, are needed to rule out TB disease.



A diagnosis of latent TB infection is made if a person has a positive TB blood test (IGRA) or TST result and a medical exam does not indicate TB disease.

LATENT TB INFECTION TESTING AND TREATMENT: SUMMARY OF U.S. RECOMMENDATIONS (page 4/4)

RECOMMENDED TREATMENT REGIMENS FOR LATENT TB INFECTION:



Treating latent TB infection is effective in preventing TB disease and less costly than treating TB disease.

There are several [treatment regimens](#) for the treatment of latent TB infection.

- These regimens use the drugs isoniazid, rifapentine, or rifampin.

CDC and the National Tuberculosis Controllers Association (NTCA) preferentially recommend short-course, rifamycin-based, 3- or 4-month latent TB infection treatment regimens over 6- or 9-month isoniazid monotherapy (6H or 9H, respectively).

- Short-course regimens include:
 - Three months of once-weekly isoniazid plus rifapentine (3HP)
 - Four months of daily rifampin (4R)
 - Three months of daily isoniazid plus rifampin (3HR)

- Short-course latent TB infection treatments are effective, are safe, and have higher completion rates than longer treatments.
- If a short-course treatment regimen is not an option, 6H or 9H is an effective alternative latent TB infection treatment regimen.



Shorter regimens help patients finish treatment.

All treatment must be modified if the patient is a contact of an individual with drug-resistant TB disease. Consultation with a TB expert is advised if the known source of TB infection has drug-resistant TB.

Clinicians should choose the appropriate treatment regimen based on drug susceptibility results of the presumed source case (if known), coexisting medical conditions (e.g., HIV infection), and potential for drug-drug interactions.

Clinicians may choose to administer latent TB infection treatment through directly observed therapy (DOT) or self-administered therapy (SAT) based on local practice, individual patient attributes, and provider preferences.

LATENT TB INFECTION ONLINE RESOURCE HUB



CDC's One-stop Shop for Information, Guidance, and Education

The [Latent TB Infection Online Resource Hub](#) is a collection of downloadable materials for informing and educating the public, health care providers, policy makers, and other partners about the importance of expanded latent TB infection testing and treatment. Available resources include:

- Guidance Documents
- Slide Sets
- Fact Sheets for Clinicians & Patients
- Images & Videos
- Communication Templates
- Infographics
- Key Messages & Social Media Content
- Helpful Links & More

Tuberculin Skin Testing

What is it?

The **Mantoux tuberculin skin test (TST)** is one method of determining whether a person is infected with *Mycobacterium tuberculosis*. Reliable administration and reading of the TST requires standardization of procedures, training, supervision, and practice.

How is the TST Administered?

The TST is performed by injecting 0.1 ml of tuberculin purified protein derivative (PPD) into the inner surface of the forearm. The injection should be made with a tuberculin syringe, with the needle bevel facing upward. The TST is an intradermal injection. When placed correctly, the injection should produce a pale elevation of the skin (a wheal) 6 to 10 mm in diameter.

How is the TST Read?

The skin test reaction should be read between 48 and 72 hours after administration by a health care worker trained to read TST results. A patient who does not return within 72 hours will need to be rescheduled for another skin test.

The reaction should be measured in millimeters of the induration (firm swelling). The reader should not measure erythema (redness). The diameter of the indurated area should be measured across the forearm (perpendicular to the long axis).

How Are TST Reactions Interpreted?

Skin test interpretation depends on two factors:

- Measurement in millimeters of the induration
- Person's risk of TB infection or the risk of progression to TB disease if infected

Classification of the Tuberculin Skin Test Reaction

- An **induration of 5 or more millimeters** is considered positive in
 - » People living with HIV
 - » A recent contact of a person with infectious TB disease
 - » People with chest x-ray findings suggestive of previous TB disease
 - » People with organ transplants
 - » Other immunosuppressed people (e.g., patients on prolonged therapy with corticosteroids equivalent to/greater than 15 mg per day of prednisone or those taking TNF- α antagonists)
- An **induration of 10 or more millimeters** is considered positive in
 - » People born in countries where TB disease is common, including Mexico, the Philippines, Vietnam, India, China, Haiti, and Guatemala, or other countries with high rates of TB
 - » People who abuse drugs
 - » Mycobacteriology laboratory workers
 - » People who live or work in high-risk congregate settings (e.g., nursing homes, homeless shelters, or correctional facilities)
 - » People with certain medical conditions that place them at high risk for TB (e.g., silicosis, diabetes mellitus, severe kidney disease, certain types of cancer, and certain intestinal conditions)
 - » People with a low body weight (<90% of ideal body weight)
 - » Children younger than 5 years of age
 - » Infants, children, and adolescents exposed to adults in high-risk categories
- An **induration of 15 or more millimeters** is considered positive in
 - » People with no known risk factors for TB



TUBERCULIN SKIN TESTING (page 2/3)

What Are False-Positive Reactions?

Some persons may react to the TST even though they are not infected with *M. tuberculosis*. The causes of these false-positive reactions may include, but are not limited to, the following:

- Previous TB vaccination with the bacille Calmette-Guérin (BCG) vaccine
- Infection with nontuberculosis mycobacteria (mycobacteria other than *M. tuberculosis*)
- Incorrect measurement or interpretation of reaction
- Incorrect antigen used

A TB blood test is the preferred method of testing for people who have received the BCG vaccine in order to prevent false-positive reactions. TB blood tests are also called interferon-gamma release assays or IGRAs.

What Are False-Negative Reactions?

Some persons may not react to the TST even though they are infected with *M. tuberculosis*. The reasons for these false-negative reactions may include, but are not limited to, the following:

- Anergy
- Recent TB infection (within the past 8 to 10 weeks)
- Very young age (younger than 6 months)
- Recent live-virus measles or smallpox vaccination
- Incorrect method of giving the TST
- Incorrect measuring or interpretation of TST reaction

Who Can Receive a TST?

Most persons can receive a TST. TST is the recommended method of testing for children younger than 5 years of age. It should be noted that the American Academy of Pediatrics (AAP) recommends that either a TST or TB blood test (interferon-gamma release assay [IGRA]), can be used in children 2 years and older. In children previously vaccinated with BCG, a TB blood test is preferred to avoid a false-positive TST result caused by a previous vaccination with BCG.

TST is contraindicated only for persons who have had a severe reaction (e.g., necrosis, blistering, anaphylactic shock, or ulcerations) to a previous TST. It is not contraindicated for any other persons, including infants, children, pregnant women, or persons living with HIV. However, TB blood tests are the preferred method of testing for people who have received the BCG TB vaccine.

How Often Can TSTs Be Repeated?

In general, there is no risk associated with repeated tuberculin skin test placements. If a person does not return within 48-72 hours for a tuberculin skin test reading, a second test can be placed as soon as possible. There is no contraindication to repeating the TST, unless a previous TST was associated with a severe reaction.

What is a Boosted Reaction?

A boosted reaction occurs mainly in previously infected, older adults whose ability to react to tuberculin has decreased over time. When given a TST years after infection, these persons may have an initial negative reaction. However, the TST may stimulate the immune system, causing a positive or boosted reaction to subsequent tests. Giving a second TST after an initial negative TST reaction is called two-step testing.

Why is Two-Step Testing Conducted?

Two-step testing is useful for the initial skin testing of adults who are going to be retested periodically, such as some health care workers. This two-step approach can reduce the likelihood that a boosted reaction will be misinterpreted as a recent infection.

Can TSTs Be Given To Persons Receiving Vaccinations?

Vaccination with live viruses, including measles, mumps, rubella, oral polio, varicella, yellow fever, BCG, and oral typhoid, may interfere with TST reactions. For persons scheduled to receive a TST, testing should be done as follows:

- Either on the same day as vaccination with live-virus vaccine or
- At least 1 month after the administration of the live-virus vaccine

TUBERCULIN SKIN TESTING (page 3/3)

Are there alternative tests to the TST?

There are two kinds of tests that are used to determine if a person has been infected with TB bacteria: the TB blood test and the TB skin test. TB blood tests (sometimes called IGRAs) use a blood sample to find TB infection. The tests measure the response of TB proteins when they are mixed with a small amount of blood. Only one visit is required to draw blood for this test. Health care providers are encouraged to use newer TB blood tests to screen for TB infection. In order to prevent false-positive reactions, TB blood tests are also the preferred method of TB testing for people 5 years of age and older who have received the BCG TB vaccine.

What does a positive TST mean for the diagnosis of latent TB infection and TB disease?

Diagnosis of Latent TB Infection

A diagnosis of latent TB infection is made if a person has a positive TB test result and a medical evaluation does not indicate TB disease. The decision about treatment for latent TB infection will be based on a person's chances of developing TB disease by considering their risk factors.

Diagnosis of TB Disease

TB disease is diagnosed by medical history, physical examination, chest x-ray, and other laboratory tests. TB disease is treated by taking several drugs as recommended by a health care provider.

What are treatment options for latent TB infection?

Treating latent TB infection is effective in preventing TB disease and less costly than treating TB disease. There are several treatment regimens for the treatment of latent TB infection. These regimens use the drugs isoniazid, rifapentine, or rifampin.

CDC and the National Tuberculosis Controllers Association (NTCA) preferentially recommend short-course, rifamycin-based, 3- or 4-month latent TB infection treatment regimens over 6- or 9-month isoniazid monotherapy (6H or 9H, respectively). Short-course regimens include: Three months of once-weekly isoniazid plus rifapentine (3HP), four months of daily rifampin (4R), or three months of daily isoniazid plus rifampin (3HR). Short-course latent TB infection treatments are effective, are safe, and have higher completion rates than longer treatments.

If a short-course treatment regimen is not an option, 6H or 9H is an effective alternative latent TB infection treatment regimen.

Additional Information

- CDC. Guidelines for preventing the transmission of Mycobacterium tuberculosis in health-care settings, 2005. MMWR 2005; 54 (No. RR-17). www.cdc.gov/tb/publications/guidelines/infectioncontrol.html
- CDC. Mantoux Tuberculin Skin Test: Training Materials Kit (2003).
- CDC. Targeted tuberculin testing and treatment of latent tuberculosis infection. MMWR 2000; 49 (No. RR-6). www.cdc.gov/MMWR/PDF/rr/rr4906.pdf
- Lewinsohn et al., Official American Thoracic Society/Infectious Diseases Society of America/CDC Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children, Clinical Infectious Diseases, 2017, Pages e1–e33. www.academic.oup.com/cid/article/64/2/e1/2629583
- Latent TB Infection Testing and Treatment: Summary of U.S. Recommendations www.cdc.gov/tb/publications/tbi/pdf/CDC-USPSTF-LTBI-Testing-Treatment-Recommendations-508.pdf
- What You Need To Know About the Tuberculosis Skin Test www.cdc.gov/tb/publications/pamphlets/tb_skin_test.pdf
- Patient Education Materials Series www.cdc.gov/tb/education/patient_edmaterials.html



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LATENT TUBERCULOSIS INFECTION TREATMENT REGIMENS

Latent Tuberculosis Infection Treatment Regimens

Treatment regimens for latent TB infection (LTBI) use isoniazid (INH), rifapentine (RPT), or rifampin (RIF). **CDC and the National Tuberculosis Controllers Association preferentially recommend short-course, rifamycin-based, 3- or 4-month latent TB infection treatment regimens over 6- or 9-month isoniazid monotherapy.**

Clinicians should choose the appropriate treatment regimen based on drug susceptibility results of the presumed source case (if known), coexisting medical conditions (e.g., HIV*), and potential for drug-drug interactions.

https://www.cdc.gov/mmwr/volumes/69/rr/rr6901a1.htm?s_cid=rr6901a1_w

	DRUG	DURATION	FREQUENCY	TOTAL DOSES	DOSE AND AGE GROUP
Preferred	ISONIAZID[†] AND RIFAPENTINE^{††} (3HP) 	3 months	Once weekly	12	Adults and children aged ≥12 yrs INH: 15 mg/kg rounded up to the nearest 50 or 100 mg; 900 mg maximum RPT: 10–14.0 kg; 300 mg; 14.1–25.0 kg; 450 mg; 25.1–32.0 kg; 600 mg; 32.1–49.9 kg; 750 mg; ≥50.0 kg; 900 mg maximum
					Children aged 2–11 yrs INH [‡] : 25 mg/kg; 900 mg maximum RPT [‡] : See above
	RIFAMPIN[§] (4R) 	4 months	Daily	120	Adults: 10 mg/kg; 600 mg maximum Children: 15–20 mg/kg; 600 mg maximum
Alternative	ISONIAZID[†] AND RIFAMPIN[§] (3HR) 	3 months	Daily	90	Adults INH [‡] : 5 mg/kg; 300 mg maximum RIF [‡] : 10 mg/kg; 600 mg maximum
					Children INH [‡] : 10–20 mg/kg [¶] ; 300 mg maximum RIF [‡] : 15–20 mg/kg; 600 mg maximum
	ISONIAZID[†] (6H/9H) 	6 months	Daily	180	Adults Daily: 5 mg/kg; 300 mg maximum Twice weekly: 15 mg/kg; 900 mg maximum
			Twice weekly [¶]	52	
		9 months	Daily	270	Children Daily: 10–20 mg/kg [¶] ; 300 mg maximum
			Twice weekly [¶]	76	Twice weekly: 20–40 mg/kg [¶] ; 900 mg maximum

*For persons with HIV/AIDS, see Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents Living with HIV available at: <https://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arc/367/overview>.

[†]Isoniazid is formulated as 100-mg and 300-mg tablets.

^{††}Rifapentine is formulated as 150-mg tablets in blister packs that should be kept sealed until use.

[‡]Intermittent regimens must be provided via directly observed therapy (i.e., a health care worker observes the ingestion of medication).

[§]Rifampin (rifampicin) is formulated as 150-mg and 300-mg capsules.

[¶]The American Academy of Pediatrics acknowledges that some experts use rifampin at 20–30 mg/kg for the daily regimen when prescribing for infants and toddlers. **Source:** American Academy of Pediatrics.

Tuberculosis. In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. Red Book: 2018 Report of the Committee on Infectious Diseases. 31st ed. Itasca, IL: American Academy of Pediatrics; 2018:829–50.

^{¶¶}The American Academy of Pediatrics recommends an INH dosage of 10–15 mg/kg for the daily regimen and 20–30 mg/kg for the twice weekly regimen.



DETERMINING LTBI TREATMENT COMPLETION

Determining LTBI Treatment Completion

▶ **IMPORTANT!** Successful completion of LTBI therapy is based on the total number of doses taken (within a specified time period), not duration alone

Drug(s)	Duration	Abbr	Interval	# Doses	Within
Isoniazid & Rifapentine	3 months	3HP	Once weekly	12	16 weeks
Rifampin	4 months	4R	Daily	120	6 months
Isoniazid & Rifampin	3 months	3HR	Daily	90	4 months
Isoniazid	9 months	9H	Daily	270	12 months
			Twice weekly	76	
	6 months	6H	Daily	180	9 months
			Twice weekly	52	

LINKS TO LTBI PRODUCTS/TOOLS

Curry International Tuberculosis Center - <https://www.currytbcenter.ucsf.edu/products>

Patient Education – LTBI Flipbook – The flipbook is designed as a guide and teaching tool for healthcare personnel to use when providing patient education to persons at risk for TB infection, or newly diagnosed with LTBI. It contains basic information on LTBI, its diagnosis, transmission, treatment benefits and potential side effects. The English version can be downloaded for local context adaptation. <https://www.currytbcenter.ucsf.edu/products/ltbi-flipbook-patient-education-tool>

Risk Assessment Tool – California Tuberculosis Risk Assessment – This tool is designed to help clinicians select adults for LTBI testing who are at high-risk for TB exposure or progression to TB disease. <https://www.currytbcenter.ucsf.edu/products/view/california-tuberculosis-risk-assessment>

Calipers – for tuberculin skin testing – <https://www.currytbcenter.ucsf.edu/products/view/calipers-tuberculin-skin-test-reading-qty-25>

Pocket Booklet – Nursing Guide for Managing Side Effects to Drug-resistant TB Treatment – This guide is designed as a reference and job aid for nurses who provide TB care to aid in identifying symptoms that may indicate a drug-related side effect. All first line anti-TB drugs are included making this guide a relevant resource for guiding nursing assessment and interventions for a patient experiencing symptoms during the course of TB treatment (whether it be treatment for latent TB infection, drug-susceptible or drug-resistant TB).

<https://www.currytbcenter.ucsf.edu/products/view/nursing-guide-managing-side-effects-drug-resistant-tb-treatment>

[Smartphone app also available for download for both iOS (App Store) and android (Google Play) operating systems]

Rutgers Global Tuberculosis Institute

Booklet – Management of Latent Tuberculosis Infection in Children and Adolescents: A guide for the primary care provider – <https://globaltb.njms.rutgers.edu/educationalmaterials/productfolder/ltbichildren.php>

Laminated Pocket Card – Diagnosis and Treatment of Latent Tuberculosis Infection (LTBI) in Adults – <https://globaltb.njms.rutgers.edu/educationalmaterials/productfolder/ltbidrugcard.php>

Laminated Pocket Card – Diagnosis and Treatment of Latent Tuberculosis Infection (LTBI) in Children and Adolescents – <https://globaltb.njms.rutgers.edu/educationalmaterials/productfolder/PEDSLTBICard.php>

TB Toolkit for Community Health Centers and Federally Qualified Health Centers – This toolkit is designed to provide key information for both health departments and community health centers, including FQHCs. By creating a list of existing tools and providing suggestions for use, this toolkit can be a resource for building partnerships and accessing relevant information. <https://globaltb.njms.rutgers.edu/educationalmaterials/productfolder/toolkitfqhc.php>

Case Management for Latent TB Infection
Supplemental Material

Heartland National Tuberculosis Center – <https://www.heartlandntbc.org/products/>

Booklet – Tips for Coding and Billing: Screening, Diagnosis, and Treatment of Latent Tuberculosis Infection (LTBI) in Primary Care Settings

Printable Booklet – TB Screening Tests in Children – This guide provides the HCW with a quick reference on available methods for testing children for tuberculosis. It includes available methods, interpreting the test result as well as next steps.

Letter size Poster – Tips for Treating Latent TB Infection in Children

Brochure – Limiting Liver Toxicity in the HIV-Positive Patient with Latent Tuberculosis Infection

Pocket Card – Tuberculosis Medication Drug and Food Interactions

Patient Education Flipbook – What you Need to Know about Tuberculosis (in Dari and Pashto)

Southeastern National Tuberculosis Center – <https://sntc.medicine.ufl.edu/home/index#/products/106>

Patient Fact Sheets – These are patient education fact sheets covering individual LTBI treatment regimen options (Isoniazid and Rifapentine, Rifampin, and Isoniazid LTBI regimens) and are available in multiple languages

Patient Education Handout – You Can Prevent Tuberculosis – This patient handout describes the main characteristics of LTBI and Active TB, as well as their differences and is available in multiple languages.

Medication Tracker – LTBI Medication Tracker and Symptom Checklist – available for recommended LTBI treatment regimens in multiple languages

Mayo Clinic Center for Tuberculosis (MCCT) – <https://centerfortuberculosis.mayo.edu/>

Centers for Disease Control and Prevention

Latent Tuberculosis Resources Hub – <https://www.cdc.gov/tb/latent-tb-infection-resources/index.html>

Latent Tuberculosis Infection Testing and Treatment: Summary of U.S. Recommendations – <https://www.cdc.gov/tb/hcp/education/latent-tb-infection-recommendations-summary.html>

What You Need to Know About the TB Skin Test Fact Sheet – <https://www.cdc.gov/tb/communication-resources/skin-test-fact-sheet.html>

TB Free California

The TB Free California initiative is a partnership among the California Department of Public Health (CDPH), community clinics and health departments throughout California to eliminate tuberculosis (TB) – <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/TB-Free-California.aspx>