OIO Orthopaedic Institute of Ohio

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Confidential information may be accessed only by OIO employees having a *job-related need to know*. *Job-related need-to-know* is a principle that states an employee should access only the specific information necessary to perform their appointed duties. This means that unless the employee has a *job-related need to know*, the employee cannot access information on their families, friends, other employees, or any other person without explicit permission. Employees with access to confidential information must assess the appropriateness of each use of information on a *need-to-know* basis. Confidential information may be accessed and/or released only by authorized OIO employees and then only in accordance with OIO policies.

It is the expectation of OIO, that all employees, and others serving at OIO, exercise *due care* in any discussion, access, storage, interpretation, release, or handling of confidential patient/employee-specific information.

You may become aware of confidential information because it is part of your job responsibility, or you may encounter it unintentionally through your association with OIO. Any employee or individual serving at OIO who voluntarily allows or participates in inappropriate access and/or dissemination of confidential information may be subject to immediate disciplinary action, up to and including discharge. All individuals are encouraged to report known or suspected violations of confidential information.

I understand that I must sign this statement as a condition of employment. My signature certifies that I have read and understand my responsibilities regarding confidential information.

Signature _____Date _____

Printed Name _____

Job Title/Classification _____

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1 All persons employed by OIO and all temporary employees, volunteers, contracted individuals, and students must sign this confidentiality statement upon hire or commencement of activity at OIO, and annually thereafter.

OIO Orthopaedic Institute of Ohio

Volunteer Contact Form

Full Name: _____

Date of Birth: _____ Gender: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Phone 1: _____ Phone 2: _____

University Affiliation: _____

Is this a formal clinical rotation established for a class or by a professional program?

Yes No

Is this a formal rotation/observation for a course?

Yes No

Please provide the program, name of class & name of instructor:

_____

_____

_____

What profession are you primarily here to observe?

_____

Emergency Contact

Name: _____

Phone: _____

Relationship to Person: _____

Annual Tuberculosis Assessment

Please complete the following brief questionnaire about your health.

Do you currently have any of the following symptoms?

1. Unexplained cough lasting greater than 2 weeks?	YES ☐	NO ☐
2. Unexplained weight loss?	YES ☐	NO ☐
3. Loss of appetite/no appetite?	YES ☐	NO ☐
4. Unexplained fever?	YES ☐	NO ☐
5. Chills?	YES ☐	NO ☐
6. Unexplained night sweats?	YES ☐	NO ☐
7. Pain in chest?	YES ☐	NO ☐
8. Coughing up blood/phlegm?	YES ☐	NO ☐
9. Shortness of breath?	YES ☐	NO ☐
10. Weakness or fatigue?	YES ☐	NO ☐
11. Educational material on TB provided?	YES ☐	NO ☐

If you answered yes to any of questions 1-10 above, please describe symptoms further. (When did they start? Have you sought treatment? If yes, what treatment was done? Continue on the back of the form if necessary.)

_____

_____

_____

_____
Printed Name

_____ _____
Signature Date

For Office Use Only:

_____ _____
Director of Clinical Services Date

Was this employee referred for further treatment? YES NO

If yes, to whom? _____ Date of Referral? _____

Chest X-ray? YES NO

Work Restrictions? YES NO

If yes, list restrictions_____

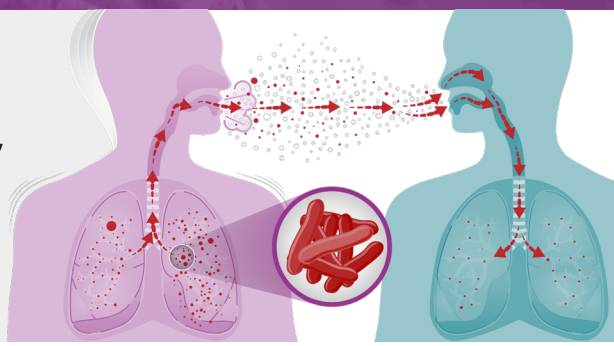
Any Medications? YES NO

If yes, list medications_____

What You Need to Know About Tuberculosis

Tuberculosis (TB) is a disease caused by germs that are spread from person to person through the air. TB usually affects the lungs, but it can also affect other parts of the body, such as the brain, the kidneys, or the spine.

Not everyone infected with TB germs becomes sick. As a result, two TB-related conditions exist: latent TB infection (or inactive TB) and TB disease. If not treated properly, TB disease can be fatal.



The Difference Between Inactive TB and Active TB Disease

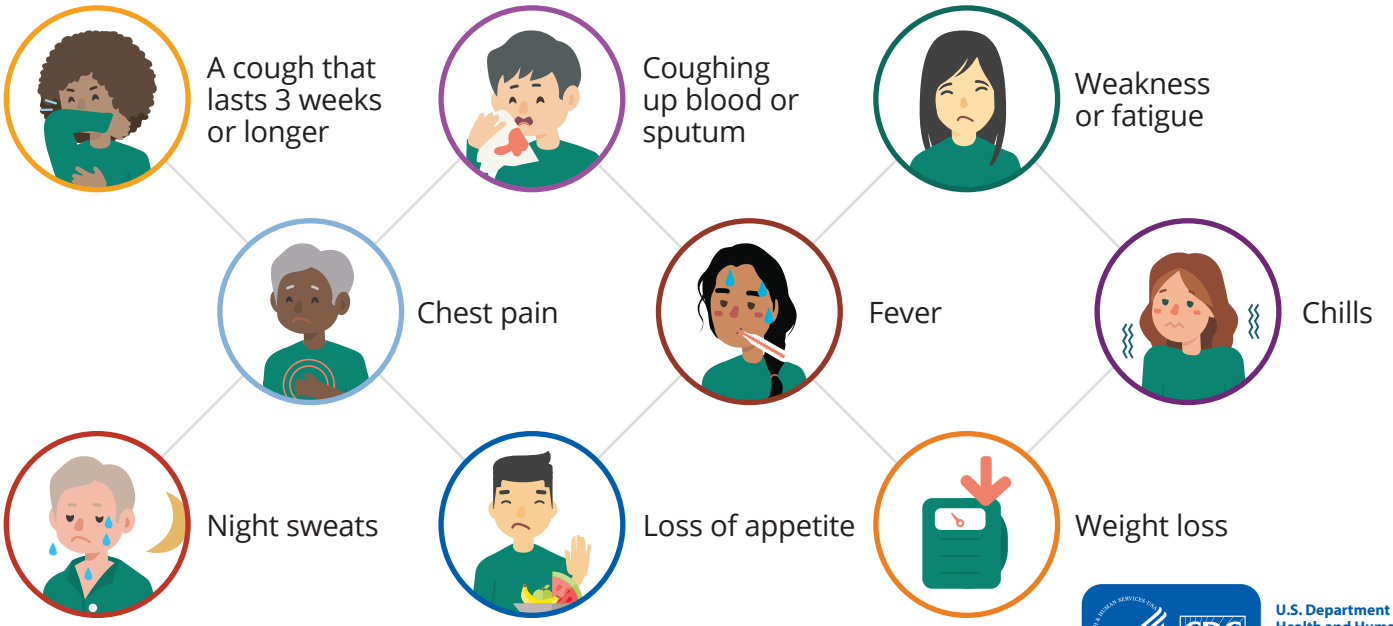
A Person With Inactive TB

- Has a small amount of TB germs in their body that are alive but inactive.
- Has no symptoms and does not feel sick.
- Cannot spread TB germs to others.
- Usually has a positive TB blood test or TB skin test indicating TB infection.
- Has a normal chest x-ray and a negative sputum smear.
- Needs treatment for inactive TB to prevent active TB disease.

A Person With Active TB Disease

- Has a large amount of active TB germs in their body.
- Has symptoms and feels sick.
- May spread TB germs to others.
- Usually has a positive TB blood test or TB skin test indicating TB infection.
- May have an abnormal chest x-ray, or positive sputum smear or culture.
- Needs treatment for active TB disease.

If your body cannot stop TB germs from growing, you develop active TB disease. Symptoms of active TB disease include:



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Testing for TB

Getting tested and treated for TB can protect yourself, your family and friends, and your community. There are two types of tests for TB infection: the **TB blood test** and the **TB skin test**.

A Positive Test For TB Infection

You have TB germs in your body. Your doctor will do other tests to determine if you have inactive TB or active TB disease. These tests may include a chest x-ray, and a test of the sputum you cough up.

A Negative Test For TB Infection

A negative test means you likely do not have inactive TB or active TB disease.

Your doctor may do more tests if:

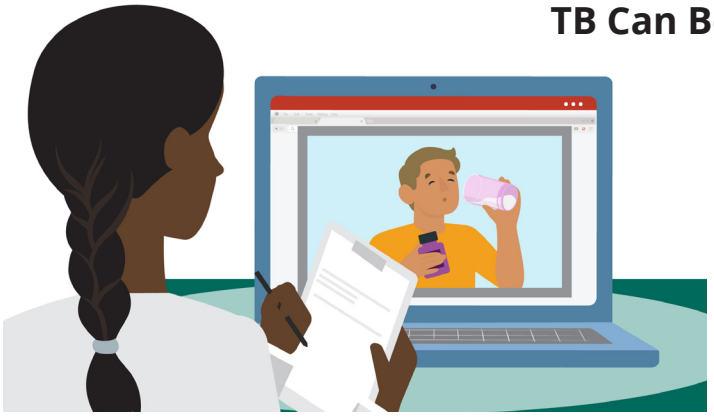
- You have symptoms of active TB disease, like coughing, chest pain, fever, weight loss, or tiredness.
- You have HIV infection.
- Your exposure to TB germs was recent.

Tell Your Doctor if You Received a TB Vaccine

TB blood tests are the preferred test for people who have received the bacille Calmette-Guérin (BCG) TB vaccine. Unlike the TB skin test, TB blood tests are not affected by BCG vaccination.

Many people born outside of the United States have received the BCG TB vaccine. BCG vaccination does not completely prevent people from getting TB. A positive reaction to a TB skin test may be due to the BCG vaccine itself or due to infection with TB germs.

TB Can Be Treated



TB germs can live in your body for years without causing symptoms. If you have inactive TB, treating it is the best way to protect you from getting sick with active TB disease.

If you have been diagnosed with active TB disease, you can be treated with medicine. You will need to take and finish all of your TB medicine as directed by your doctor or nurse. This is to help you feel better and prevent other people from getting sick.

The best way to remember to take your medicines for active TB disease is by receiving directly observed therapy (DOT). Through DOT, you will meet with a health care worker every day or several times a week either in-person or virtually. The health care worker will make sure that the TB medicines are working as they should.

TB Risk Factors

Some people develop TB disease soon after becoming infected (within weeks) before their immune system can fight the TB bacteria. Other people may get sick years later, when their immune system becomes weak for another reason.

Overall, about 5 to 10% of infected persons who do not receive treatment for latent TB infection will develop TB disease at some time in their lives. For persons whose immune systems are weak, especially those with HIV infection, the risk of developing TB disease is much higher than for persons with normal immune systems.

Generally, persons at high risk for developing TB disease fall into two categories:

- Persons who have been recently infected with TB bacteria
- Persons with medical conditions that weaken the immune system

Persons who have been Recently Infected with TB Bacteria

This includes:

- Close contacts of a person with infectious TB disease
- Persons who have immigrated from areas of the world with high rates of TB
- Children less than 5 years of age who have a positive TB test
- Groups with high rates of TB transmission, such as homeless persons, injection drug users, and persons with HIV infection
- Persons who work or reside with people who are at high risk for TB in facilities or institutions such as hospitals, homeless shelters, correctional facilities, nursing homes, and residential homes for those with HIV

Persons with Medical Conditions that Weaken the Immune System

Babies and young children often have weak immune systems. Other people can have weak immune systems, too, especially people with any of these conditions:

- HIV infection (the virus that causes AIDS)
- Substance abuse
- Silicosis
- Diabetes mellitus
- Severe kidney disease
- Low body weight
- Organ transplants
- Head and neck cancer
- Medical treatments such as corticosteroids or organ transplant
- Specialized treatment for rheumatoid arthritis or Crohn’s disease

Related Links

For Patients

- TB – General Information (Fact sheet)
- Questions and Answers About TB (Booklet)
- You Can Prevent TB (Fact sheet)
- State TB Control Offices

For Health Care Providers

- Targeted Tuberculin Testing and Interpreting Tuberculin Skin Test Results (Fact sheet)
- The Difference Between Latent TB Infection and TB Disease (Fact sheet)
- TB Guidelines

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Tuberculin Skin Testing
Information for Health Care Providers

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

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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

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/ltbi/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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