Tuberculosis: TB in a post-COVID era

Tuberculosis (TB) is an ancient disease that has evaded eradication for centuries despite global public health efforts. In the United States (U.S.), we've seen a steady decline in cases over the last three decades, with the lowest case rate yet in 2020 at 2.2 cases per 100,000 population reported by the Centers for Disease Control and Prevention (CDC). While the 2020 data is encouraging, the effects of the COVID-19 pandemic on TB eradication efforts are coming into focus; 2021 data indicates an increase in case rates to 2.4 per 100,000 population (a 9.4% increase).

How is TB spread?

TB is caused by a bacterium called *Mycobacterium tuberculosis* and most often spread from person to person through tiny airborne particles when a person with active disease speaks, coughs, or sneezes due to infection in the lungs called pulmonary TB. Sometimes, TB affects other organs of the body, called extrapulmonary TB, which is less likely to spread to others.

What happens if I am exposed to TB?

TB exists in two states: active TB disease and latent TB Infection (LTBI).

In general, exposure requires **>8 hours of continuous exposure** to an infectious individual.

In most cases, an exposed individual's immune system is able to combat the TB bacteria and active disease does not develop. This is called **Latent TB infection** (LTBI) where you are not considered contagious and are asymptomatic (do not have symptoms).

Unfortunately, a few individuals (around 10% of those infected) will progress to **active TB disease**. This is when the body's immune system is unable to inhibit the bacteria from replicating, leading to active symptoms.

It is estimated that up to **13 million people in the U.S**. are living with **LTBI**!

What are the symptoms of active TB?

TB disease is **insidious**, meaning it takes time for signs and symptoms to develop and they often mimic other illnesses:

- A chronic cough that lasts >3 weeks
- Coughing up sputum, which may be bloody (Hemoptysis)
- Weakness or fatigue
- Unintentional weight loss
- Drenching night sweats
- Fever and chills

Who is most at risk of TB infection and progressing to active TB?

Risk factors for TB infection include:

- Born in, or visiting, a country with a high burden of endemic TB
- Time spent in correctional facilities (e.g., prison, jail)
- Prolonged exposure to someone with known TB disease, particularly household members
- Homelessness, injection drug use, and persons with HIV
- Children less than 5 years of age who have a positive TB test
- Those who work in facilities that care for TB patients like hospitals, microbiology labs, clinics, nursing homes, homeless shelters, and correctional facilities

Risk factors for progressing to active TB disease include:

- HIV co-infection
- History of substance abuse
- Diabetes
- Kidney disease
- History of organ transplant
- Chronic corticosteroid use
- Other immunocompromising conditions that inhibit the immune system

How do you diagnose TB?

Testing for and Diagnosing TB requires evaluation by a trained provider, and may include:

- Blood tests (IGRA)
- Skin tests (tuberculin skin test)
- Microbiology cultures (sputum or other respiratory specimens)
- Symptom review
- Radiologic imaging
- Risk factor assessment (e.g., history of exposure, immune status, profession, etc.)

How do you treat TB?

The good news is that **TB is completely treatable**!

Whether you have active TB disease or LTBI, treatment options are available to cure you of the disease – but observance of treatment is **incredibly important**! Poor compliance with treatment may lead to drug resistance, which will increase your health risks and prolong your treatment.

Treatment may take several months to complete – make sure you fully understand your prescription by discussing with your provider or local public health department.

Is there a vaccine to prevent TB?

Currently, there is no universally effective vaccine against TB. The BCG (bacilli Calmette-Guerin) vaccine is sometimes given in countries with high TB burden and has shown to reduce risk of TB meningitis in children. This vaccine is not routinely given in the U.S.

What is the U.S. doing NOW to eradicate TB?

The CDC has several research projects underway to help address TB infection in the U.S. As well, the CDC is proactively working to address health disparities related to TB, including racial disparities and those experiencing unavoidable risk factors (homelessness, incarceration, immigrant populations).

More Resources

CDC, Tuberculosis Information Website. https://www.cdc.gov/tb/default.htm

CDC, Tuberculosis (TB) Professional Resources and Tools. https://www.cdc.gov/tb/default.htm

CDC, World TB Day Resource Website. https://www.cdc.gov/tb/worldtbday/default.htm

"Tuberculosis: Unite to end it". APIC.com. Retreived April 2022. https://apic.org/monthly_alerts/tuberculosis-unite-to-end-it/

"Tuberculosis: Considerations for an Old Threat". APIC.com. Retrieved April 2022. https://apic.org/monthly_alerts/tuberculosis-considerations-for-an-old-threat/

American Lung Association, Tuberculosis Information Website. https://www.lung.org/lung-health-diseases/lung-disease-lookup/tuberculosis

IDSA, TB Diagnosis Information Website. https://www.idsociety.org/practice-guideline/diagnosis-of-tb-in-adults-and-children/