

Date: 5/27/2008 Patient: Elizabeth Test

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Tuberculosis

What is tuberculosis?

Tuberculosis (TB) is an infectious disease that develops slowly and can lead to ill health for a long time. If it is not treated it can cause death.

How does it occur?

TB is caused by a type of bacteria called *Mycobacterium tuberculosis*. The bacteria usually attack the lungs. They can destroy parts of the lungs, making it hard to breathe. The bacteria can spread to and damage other parts of the body, especially the brain, kidneys, bones, and joints. The lymph nodes can also become infected.

Most people who are infected with TB bacteria do not develop active TB; that is, they do not become sick and usually do not infect others. Their body defenses control the infection by building a wall around the bacteria. However, the walling-in process does not kill the bacteria. If you are infected and later become weak, ill, or undernourished, you may start having active TB. If you are exposed to a large amount of TB bacteria, you may become ill soon after you are infected.

TB is very contagious. It is spread mainly through the air. A person who has active TB can spray droplets infected with the bacteria into the air by coughing, sneezing, or laughing. Tiny particles containing bacteria may stay in the air for several hours, ready to be breathed in by another person.

What are the symptoms?

The symptoms of TB can begin anytime from 2 months to several years after you are exposed. Possible symptoms are:

- tiredness
- weight loss and loss of appetite
- fever
- sweating at night
- joint pain
- a cough that starts out dry but later produces sputum.

Sometimes there are no symptoms.

How is it diagnosed?

Your health care provider will ask about your symptoms and give you a physical exam. You will need to have a tuberculin skin test, chest x-ray, and sputum culture:

- **Tuberculin (PPD) skin test:** Your health care provider will inject a

substance called tuberculin, or PPD, beneath your skin. If you are infected with TB, a lump will form where this shot was given within 3 days. This reaction is called a positive tuberculin test. It means that TB bacteria have invaded your body. It does not necessarily mean you have active, infectious TB. In fact, most people with positive tuberculin tests do not have active TB. If your PPD test is positive, close family members should also have the test.

- **Chest x-ray:** If you have inhaled TB bacteria but have fought off the infection, your lungs may not be damaged and your chest x-ray may be normal. However, if you have an active infection and bacteria have attacked your lungs, the damage will show on a chest x-ray.
- **Sputum culture:** Sputum is material coughed up from the lungs. It may include mucus and blood. A sample of sputum coughed up from the lungs can be viewed with a microscope to see if it contains TB bacteria. It may take up to 6 to 8 weeks for a sputum culture to give definite results.

How is it treated?

If you have active TB, you will be treated with medicines at home or in the hospital. You will probably be given several medicines, which you will need to take for several months. Possible medicines include:

- isoniazid (INH)
- rifampin
- pyrazinamide
- ethambutol.

Several medicines are necessary because one alone may not kill all the TB bacteria.

These medicines have many side effects and can upset the stomach or cause liver problems. You will need to have regularly scheduled blood tests while you are taking these drugs.

Tuberculosis has become an increasingly common disease. New strains of the TB bacteria sometimes cannot be killed by the drugs listed above and new treatments must be found.

If your TB skin test is positive, but you do not have active TB, in most cases you will still need some treatment to kill the TB bacteria and prevent an active infection. This is especially important if you have other medical conditions that decrease your ability to fight off infections, such as diabetes.

How long will the effects last?

Almost all people who are properly treated for tuberculosis are cured. The main reason that treatments sometimes do not work is that people do not take their medicines properly.

How can I take care of myself?

Ask your health care provider the following questions:

- May I continue doing everything I am used to doing; for example, exercising and cooking for my family? May I continue to work?
- What kind of diet is best?

- How long after I begin taking the medicines am I still contagious?
- If I am pregnant or breast-feeding, will the TB bacteria infect my child? Will the medicines hurt my child?
- How can I help protect my family and friends from getting infected?
- What are the side effects of the medicines?
- Are there any medicines I should avoid while taking the TB medicines?
- Can I drink alcohol while I am taking the TB medicines?
- What tests should I have before I begin the TB medicines (for example, liver function test)? How often will I need to repeat the tests while I am taking the medicines?

What can be done to help prevent tuberculosis?

TB can be prevented. To help prevent the spread of the disease people infected with TB bacteria must be diagnosed early.

If you have active TB, you can help prevent spreading the disease by following these guidelines:

- Start treatment with antibiotics as early as possible and take all of your antituberculosis medicine as prescribed.
- Dispose of used tissues in a plastic bag and seal the bag before you throw it in the garbage.
- Cover your mouth and nose when you cough, sneeze, or laugh.
- Wash your hands after sneezing or coughing or anytime your hands are around your mouth or nose.

If you are infected but do not have active TB, you may take isoniazid to prevent an active infection. If you cannot take preventive medicine, make sure you keep your follow-up appointments with your health care provider. Checkups will detect TB that is becoming active. The active TB can then be treated at an early stage before much damage is done.

If you work in a prison, hospital, or long-term care facility, you should be tested for TB regularly. Check with your provider to find out how often you should be tested. You should also ask how often you should be checked if you have a medical condition that weakens your immune system, such as diabetes or HIV infection.

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