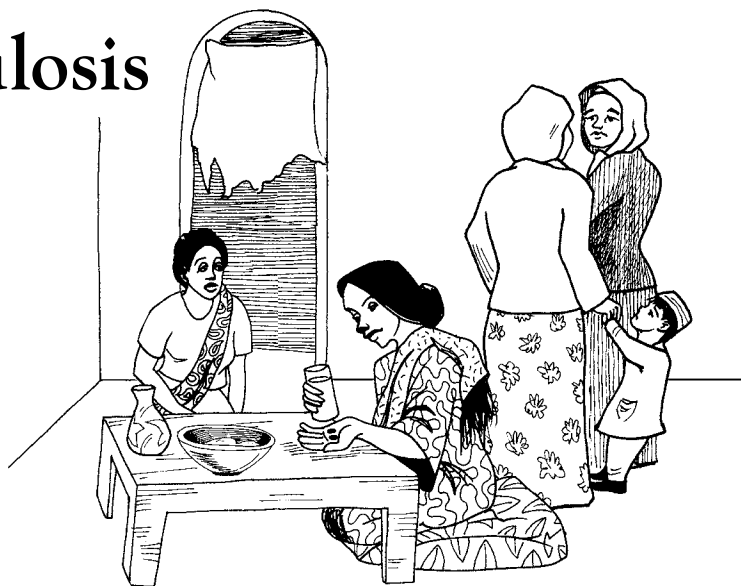


Chapter 25

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Tuberculosis (TB)



Tuberculosis (TB) is a serious disease that most often affects the lungs. TB spreads easily in crowded conditions—for example, in cities, slums, prisons, refugee camps, factories, and office buildings—especially in indoor areas where the air does not move much. People who work in dusty conditions, especially where there is dust from mining or stone crushing, are at high risk of getting sick with TB.

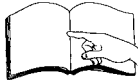
TB is especially dangerous for people with HIV. TB makes HIV disease progress faster, and HIV weakens the immune system and allows people with TB infection to develop TB sickness (active TB) faster. TB can be cured with medicines. If you have TB, see a health worker and get treatment.

WOMEN AND TB

TB affects both men and women, but fewer women get treatment. Many women die from TB because they never knew they had it, they did not get treatment, or they also had HIV. Treatment can be more difficult for a woman to get because she may not be able to leave her family and work, or she does not have the money to travel to a clinic or to take a full course of medicine. In some places a woman may not seek treatment because she fears her husband will reject her as “sickly” or too weak to do her work. A woman who works outside the home may be afraid she will be dismissed because her employer thinks she will infect others. Caring for sick family members also puts women at greater risk of getting TB.

► *With proper treatment, TB can almost always be cured.*

What Is TB?



diabetes, 174
HIV, 283

► Sometimes, especially when someone has HIV, TB germs attack other parts of the body, like the lymph nodes, bones, or joints. This is called *extrapulmonary TB*.

How TB Spreads

► For every 1,000 people in the world, around 250 of them are infected with the TB germ, but only 1 of them is actually sick with active TB disease.

TB is caused by a small germ, or bacteria. If the TB germ enters a person's body, it can infect them. An infected person will carry TB inside them, probably for life. Healthy people usually fight off TB sickness. Only about 1 out of 10 persons infected with TB becomes sick with TB in their lifetime.

People who are undernourished, *diabetic*, very young or very old, or infected with HIV are less able to fight off TB disease. Usually TB disease starts in the lungs, where TB germs eat holes in the *tissue* and destroy blood vessels. As the body tries to fight the disease, the holes fill with *pus* and small amounts of blood.



The only way to cure TB is with medicines we give for free at the clinic.

Without treatment, the body starts to waste away, and the person usually dies within 5 years. Someone who has both HIV and TB may die in just a few months without treatment. But treatment can cure TB completely.

TB spreads from one person to another when someone sick with TB in their lungs coughs germs into the air. TB germs can live in the air for hours.

People who are infected with TB but not sick with signs of TB, and those who are sick with TB in other parts of the body, are not *contagious*. A person is probably no longer contagious after taking medicines for about a month.

Because women care for many people, if they are sick with TB, they may spread it to others in the household. TB can spread from a pregnant person to their child during pregnancy, birth, and breastfeeding. (See "TB treatment during pregnancy" on p. 389.)

If TB is not treated, a person sick with TB in their lungs will infect about 10 more people with TB every year.



This year, about 10 people will be infected by each person who is sick with TB today.

The most common sign of TB is a cough that lasts for more than 3 weeks, especially if there is blood in the *sputum* (mucus that comes up from the lungs). Other signs include loss of appetite and weight, fever, feeling tired or weak, and night sweats.

The only way to know for sure if a person has TB is to test their sputum. To get a sample of sputum—and not just saliva (spit)—a person must cough hard to bring up material from deep in their lungs. The sputum is then examined in a *laboratory* to see if it contains TB germs (is positive).

A person should take 3 sputum tests. If at least 2 sputum tests are positive, the person should begin treatment. If only one test is positive, they should have their sputum tested again and, if it is positive, begin treatment. If the third test is negative, they should get a chest *x-ray*, if possible, to be certain they do not need treatment. They should also be tested for HIV since negative sputum tests are more common in people with HIV.

IMPORTANT *Because it is so common for people with HIV to be sick and die from TB, all people with HIV should be tested for TB. If their TB test is positive, a person should begin treatment right away. And in countries where HIV is common, all people with TB should consider getting an HIV test.*

TB can almost always be cured by taking the right medicines in the right amounts for the full length of the treatment.

The basic treatment for someone who has TB for the first time has 2 parts, and always includes taking more than 1 medicine. At first, a person takes 4 medicines for 2 months. Then sputum is tested. If it is negative, the person begins part 2, which includes taking 2 drugs for another 4 months (a total of 6 months of treatment). When the treatment is finished, the sputum should be checked again to make sure the person has been cured.

TB medicines include isoniazid, rifampicin or rifapentine, pyrazinamide, and ethambutol. For information about these medicines see the “Medicines Pages.” TB treatments vary from country to country. See a health worker to talk about recommendations of the TB program in your country.

If sputum is still positive after 2 months of treatment, test the person’s TB germs to see if they are resistant to the medicines (see page 390).

How to Know if a Person Has TB

► *If someone with signs of TB in the lungs has negative sputum tests, they should see a health worker who can use a chest x-ray to check for signs of pneumonia, asthma, or cancer of the lungs.*

Treat TB with Medicines

► *TB medicines can make hormonal family planning methods (like birth control pills) less effective. See page 200 for different family planning methods.*

TB treatment during pregnancy

Someone with TB can pass the infection during pregnancy to the developing baby. TB treatment during pregnancy prevents this, which makes it less likely the baby will be born too small, too soon, or die before birth. Taking TB medicines during pregnancy is safer than having TB while pregnant. The medicines above are safe during pregnancy, but some may cause pain or numbness in hands and feet. Taking 10 mg of pyridoxine (vitamin B6) each day during treatment can help. For more information, see the “Medicines Pages.”

► After the first 2 months of treatment, it is sometimes possible to take medicines 3 times a week, instead of every day, but not if you have HIV or if there is resistance to TB medicines in your area. Talk to a health worker to see if you can get this kind of treatment.

► If a person is infected by someone with drug-resistant TB, the germs causing their sickness will also be resistant.

► Health workers should always ask if a person has been treated for TB before. If they have, it is more likely they now have drug-resistant TB.

If you are being treated for TB:

- Take all the medicine for as many months as directed. **If you stop too soon, you may infect others, the illness will come back, and your TB may become resistant (see below).**
- Learn which side effects are normal and which are serious for the medicines you are taking. If you have serious side effects, stop taking the medicines and see a health worker immediately.
- Get plenty of rest and eat as well as possible. If you can, stop working until you begin to feel better.
- Avoid spreading TB germs to others. If possible, sleep separately from those who are not sick with TB for one month after starting medicines. Cover your mouth when coughing and spit sputum into a piece of paper. Throw it into a *latrine* or toilet, or burn it.
- If you give birth during treatment, your sputum should be tested. If it is negative, your baby should be given a BCG (Bacille Calmette-Guerin) vaccine, but no medicines. If your sputum is positive, your baby will need medicines. You do not need to be separated from your baby or to stop breastfeeding. Cover your mouth with a handkerchief when breastfeeding.
- If possible, go to an experienced health worker to coordinate treatment for your TB and HIV if you have both infections. Because more medications are being taken, there is a greater possibility of side effects.
- Stop smoking.



RESISTANCE TO TB MEDICINES

If a person does not take enough of the right medicines or stops taking medicines before the treatment is finished, not all the TB germs will be killed. The strongest germs will survive and multiply, and then the medicine may be unable to kill them. This is called *resistance*.

TB that has become resistant to both isoniazid and rifampicin is very difficult to cure. Treatment takes 20 to 24 months, is often less successful, and is much more expensive than treatment for ordinary TB. A person with multi-drug-resistant (MDR) or extremely-drug-resistant (XDR) TB can spread the disease to others for several months after beginning treatment.

Anyone whose sputum is still positive after 2 months of treatment may have MDR or XDR TB. See a health worker trained in treating TB to get other medicines.

Because treatment for TB is long, and the effects of stopping treatment are so serious, take extra care to help people take their medicine so it will fully cure their TB. In “directly observed treatment” (DOTS), a health worker or community volunteer watches and records that every dose is taken. **Health workers should use DOTS when possible, but especially for the first 2 months of treatment.**

IMPORTANT *The best way to prevent the spread of TB is to cure people who are sick with TB.*

These things can also help:

- Encourage people to get tested if they live with a person who is sick with TB or if they have a cough for 2 or more weeks.
- Immunize healthy babies and children with BCG vaccine to prevent the most deadly forms of TB. Children sick with *HIV* or *AIDS* should not be given BCG vaccine.

Prevent TB

Medicines to prevent TB. A person with a positive TB test, but no signs of TB sickness, can take isoniazid once a day for 6 to 9 months (see the “Medicines Pages”) to reduce the chance they will get sick with TB. People with HIV, including if they are pregnant or were previously treated for TB, should take TB treatment even if TB testing is unavailable. Anyone exposed to someone with drug-resistant TB should see a health worker to get the best medicines for prevention.

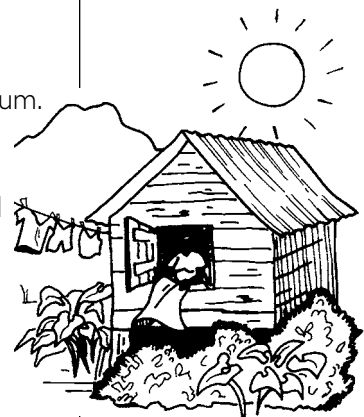
Creating effective TB control in your community requires:

- community and family education about signs of TB, how it spreads, and how to seek testing and treatment if you were exposed to TB or have developed signs.
- trained health workers or volunteers to help in the DOTS program and find and work with people sick with TB who stop treatment too soon. DOTS programs must be flexible to meet individual needs.
- a steady supply of medicines so treatment does not get interrupted.
- laboratory equipment and trained workers for testing sputum.
- a system for tracking who has TB, how treatment is going, when treatment is completed, and the outcome. Friendly support can help people taking TB medicines look forward to DOTS visits.

TB programs must care for all people sick with TB and can reach more women by:

- providing care and treatment in or near women’s homes.
- including midwives and traditional birth attendants in TB screening and DOTS programs.
- combining TB screening and treatment with other services people need.

Working for Change



Fresh air and sunshine help limit the spread of TB.