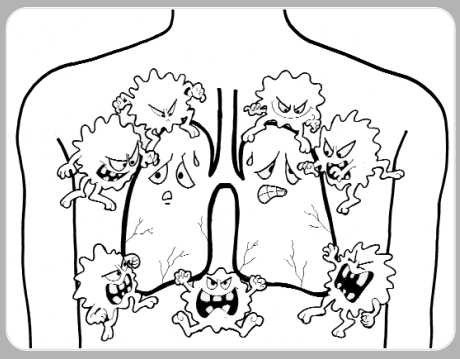

Preventing TB
in Long Term Care

Training modules for staff developers working in long term care

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Training materials were made possible by funding from
DOL/OSHA through its **Susan Harwood Training Grant Program**

December 2005

Resources from The Francis J. Curry National Tuberculosis Center, the Occupational Safety and Health Administration (OSHA) and the Centers for Disease Control and Prevention (CDC) were used in the development of these training materials.

Who is this training for?

These modules are designed to be used by nursing home staff responsible for conducting in-service training, such as staff developers, nurse educators and in-service trainers. The training topics were selected and designed for any nursing home staff that comes in contact with the facility's residents. The trainings aim to build staff knowledge and skills with regard to infection control.

Each module includes exercises and handouts for training participants. The modules are designed to be flexible enough to express diversity in culture and variability in facility policies. Trainers should review the modules prior to use to adapt or revise as required to meet participants' needs or to be in line with facility protocols or policies.

Overview of each module

Preventing TB in Long Term Care is a set of four stand-alone modules, each with short, easy learning activities. These activities are designed to facilitate discussion and problem solving.

This curriculum contains four 30-minute sessions that can be presented during staff meetings or scheduled as in-service training. Modules can be adapted and expanded as needed for your facility.

The modules include the following:

- **Module 1: The Basic Facts About TB**

The first module is designed to provide participants the opportunity to discuss the basic facts about TB, including transmission.

- **Module 2: The Difference Between TB Infection and TB Disease**

This module is meant to provide participants with the opportunity to discuss TB, including the differences between TB infection and TB disease.

- **Module 3: Preventing TB on the Job**

This module provides participants an opportunity to discuss the practice of airborne infection control in long term care facilities as a way to prevent TB.

■ **Module 4: Testing for and Treatment of TB**

This module provides the participants with the opportunity to discuss the different tests for TB and how TB disease can be successfully treated.

Pre- and post-test assessment

The last page of each module is an optional pre- and post-test. You may wish to use this with your participants to assess learning or to arrange for CEUs for your staff. Be sure to allow extra time for participants to complete these pre- and post-test sheets. Answer keys are provided for the trainer, but should not be passed out to the participants.

Tips for using the modules

The modules use key educational strategies to facilitate critical thinking and encourage staff discussion. These strategies include the following:

Short activities

Most of the activities take only five to 10 minutes, to allow staff to return to work in a reasonable amount of time. These activities are designed to be implemented quickly, to keep participants energized and interested. They are not designed to promote long debates or discussion on the topics.

The purpose of quick activities is to impart the one learning objective. Once that objective is met, the activity can be ended. Stay aware of the participants' reaction to the activity. Try not to lose their interest or engagement by taking too long to provide information or by allowing discussions to go off the topic.

Some activities lend themselves to in-depth group discussions that may take longer than the recommended amount of time. It is up to the trainer to use time necessary to meet participants' needs while balancing the importance of staying on schedule.

Role of the trainer

- ✓ Be clear about training objectives and purpose
- ✓ Keep time
- ✓ Stay on topic
- ✓ Explain instructions
- ✓ Listen
- ✓ Keep participants comfortable and engaged
- ✓ Summarize your main point

Facilitation of learning

Most of the activities build knowledge and skills. The activities encourage participants to explore questions, answers and possible connections. There are no "right" answers to the

activities and discussion questions. In fact, many activities may be done "incorrectly," that is, participants may make mistakes while practicing new skills, and will learn from each other.

The role of the trainer is to encourage exploration and to help participants answer their own questions and try out different answers. Try not to feed answers or correct ideas. Allow discussion among participants and encourage additional research after the training.

Model open and nonjudgmental behavior

In order to be open to new ideas, your staff will need a safe, non-threatening environment for learning. As a trainer, your behavior with, and reactions to, the participants can go a long way toward encouraging a supportive group. The following tips help with group work cohesion:

- Be clear about your expectations for how group members treat each other and how they participate.
- Respect participants' feelings and parameters.
- Respect patient and family confidentiality.
- Model appropriate responses and behavior.
- Demonstrate concepts and use examples when possible.
- Encourage group members to share their experiences at their own pace.
- Listen!
- Let group members react, think and analyze.
- Give compliments.
- Demonstrate acceptance and respect for all participants, regardless of race, religion, social class or sexual orientation.

A word about patient confidentiality

These modules and activities encourage the trainer and the participants to think about their workplace and their own experiences while attending the training. That's a very realistic and appropriate way to learn. However please remember that the patient's and families' confidentiality should never be jeapordized. Trainers should remind participants:

1. Not to describe patients or families by their real names.
2. Never to disclose anything in training that a patient has told the staff member in confidence.
3. Never to make fun of a patient, even in a private training.

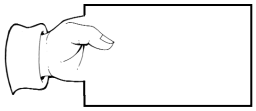
Instead, tell the participants that you are confident that they have had enough experiences to make up their own stories, scenarios or responses without breaking patient or family confidentiality.

Icons to help you

Each module includes icons to help remind you what to do as you lead the in-service.

The **pointed finger** alerts you, the trainer, of instructions to conduct some interaction with your group, such as listening for responses or writing on a flip chart.

The **balloon** shows you where your lecture points are located.



The **hand holding a paper** shows where participants will read out loud.

Additional information

Here are some resources to help you adapt this TB Prevention training module to your facility's circumstances or to share with your staff. Helpful information on TB can be found on the following web sites in Spanish and English. If you don't have a computer, you can visit these web sites with the computers at your public library.

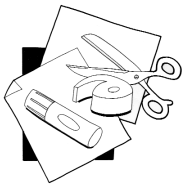
- **CDC**
  www.cdc.gov
- **OSHA**
  www.dol.gov
- **Francis J. Curry National Tuberculosis Center**
  www.nationaltbcenter.org

MODULE 1

The Basic Facts About TB

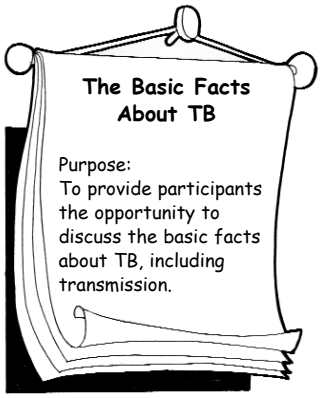
TIME REQUIRED **30 minutes**

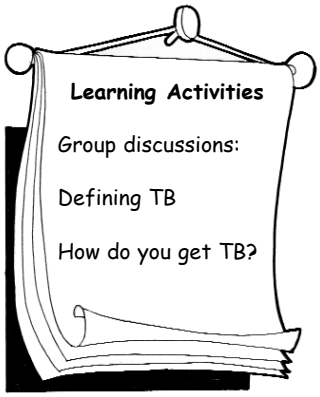
(45 minutes if optional pre-test and post-test are conducted)



PREPARATION/MATERIALS NEEDED

- ☐ Set up training space. The training room can be set up in many ways. The recommended arrangement is a circle or a U shape so participants can see and interact with one another.
- ☐ Pens, pencils, paper for participants.
- ☐ Name tags.
- ☐ Packet of handouts for each participant.
- ☐ Blank flip chart for taking group notes. If no flip chart is available, use blank 8 ½-x-11-inch paper or a dry-erase board.
- ☐ Prepare and post the following information well before the participants enter the room (see diagram below):
  - Title of training
  - Purpose of training
  - Training activities that will occur, including group discussions





- ☐ *Optional:* Photocopies of pre-test and post-test. Each participant should get one copy of the pre-test before the training starts and one copy of the post-test just after the training has ended.

Welcome and Statement of Purpose

5 minutes

Trainer states out loud:
Welcome to the training on Preventing TB in Long Term Care. Today we're using Module 1. I've written the purpose of today's training on the flip chart. In this training, you'll have an opportunity to discuss basic facts about tuberculosis, including transmission.

Trainer script printed in *italics*

Optional: Pre-Test

5 minutes

Hand out one pre-test sheet per participant. Explain that this pre-test will allow you to assess whether the training is successful. Allow participants to work for a few minutes. Collect all sheets.

Trainer states out loud:
You may think that tuberculosis, or TB, doesn't have anything to do with working in a nursing home. But, let's look at ***Handout 1.*** *It describes the kinds of workers that the Centers for Disease Control and Prevention says can be exposed to TB on the job:*

- *Workers in long-term care, including nursing homes*
- *Workers in health-care facilities, including hospitals*
- *Social services workers, including social workers*
- *Shelter workers, especially those working in homeless shelters*
- *Workers in correctional, detention and jail facilities*
- *Laboratory workers*

As we go through the training modules, we'll talk more about why workers in these specific workplaces have a higher risk of being exposed to TB on the job. But now, let's look at what TB is.

What is TB?

15 minutes

Trainer states out loud:
Let's start by asking, "What is TB?" Call out any answers, and I'll post them here on the flip chart:

Listen for and post any answers—right or wrong—like:

- It's a disease.
- It's in the lungs.
- It makes you cough a lot.
- You get it if you have HIV/AIDS.
- Etc.

Trainer states out loud:
OK, some of those answers have something to do with TB. But let's look at ***Handout 2.*** *It says: "TB stands for tuberculosis. It is a serious infectious disease caused by a bacterium called Mycobacterium tuberculosis."*

So that's the definition of TB. But that doesn't really tell us much about TB, does it?

So let's ask another question: "How do you get TB?" Call out any answers and I'll post them here on the flip chart.

Listen for and post answers—right or wrong—like:

- When someone coughs
- Living with someone who has TB
- On the bus or subway
- Kissing someone
- Etc.

Trainer states out loud:

*Great. Again, some of your answers are right. But using **Handout 3**, let's expand the list. A person with TB can put tiny invisible TB germs into the air when they:*

- *Cough*
- *Sneeze*
- *Talk*
- *Sing*
- *Shout*
- *Spit*
- *Breathe*

*Now, let's look at **Handout 4.** It tells us the three things that must be in place for someone to get TB.*

1. There has to be a person with TB disease.
2. There has to be air (also called an air path).
3. There has to be a susceptible person.

Remember that TB is an airborne disease, which means it is spread from person to person through the air.

*Let's look at **Handout 5**, called "What's Space Got to Do with It?" A single TB droplet may be enough to cause infection in another person. The environment determines the path that TB droplets take after they are airborne. So, the smaller the space and the poorer the ventilation, the higher the risk.*

A person with TB disease of the lungs or larynx (the part of the trachea that contains the vocal cords) releases tiny droplets containing TB bacteria into the air by coughing, sneezing, talking, singing, shouting, spitting or breathing. These droplets can cause TB infection if inhaled by anyone who shares air with the person with TB disease.

*You'll see in **Handout 6** that it usually takes a long period of ongoing, or constant, and close contact with a person who has TB disease before you can become infected with TB.*

But remember long-term care facilities are considered high-risk workplaces. That's why training workshops like this, TB testing and infection control are so important.

Resources/Wrap-Up/Questions

5 minutes

Trainer states out loud:
Today we talked about what TB is and how it is transmitted. You all did a great job going over a lot of information in a short amount of time. I know some of you may have other questions about TB prevention and treatment, so I'll be around after the training to answer any questions. If you think of other questions, be sure to follow up with your supervisor, your director of nursing or your director of infection control. I've also placed other information about infection control and TB on the table so you can take information with you.

Thank you all for coming to the training today.

Optional: Post-Test

5 minutes

Now pass out the post-test and give participants about 5 minutes to complete it. Collect all of the post-tests and dismiss participants.

Compare the pre- and the post-tests. If participants answered more questions correctly on the post-test, that is a good indication that they learned new information from this training.

Pre- and post-tests answers for Module 1 is 1. f; 2. e; 3. a; 4. b; 5. b. Make sure not to pass out this answer key to the participants.

Pre-Test

Name: _____

Title: _____

Today's date: _____

Today's session: **The Basic Facts About TB**

Goal:

- Define the basic facts of TB, including how TB is transmitted.

Objectives:

- Demonstrate through group discussion, the kinds of workers who can be exposed to TB on the job.
- Demonstrate through group discussion, a basic understanding of TB.
- Demonstrate through group discussion, an understanding of how TB is and is **not** transmitted.

Directions: Please circle your responses. There is only one correct answer for each question.

1. Workers who can be exposed to TB include:

a. Workers in long term care, including nursing homes.
b. Workers in hospitals.
c. Social workers who see their clients in homeless shelters.
d. Correctional officers.
e. Laboratory workers.
f. All of the above.

2. A person with TB can put TB germs into the air by:

a. Coughing or sneezing.
b. Talking or singing.
c. Shouting or spitting.
d. Breathing.
e. All of the above.

3. Why is TB called an airborne disease?

a. Because it is spread from person to person through the air.
b. Because you can only get TB when flying on an airplane.
c. Because you can get TB from playing outside in the cold air.
d. Because workers at the airport have a high risk of being exposed to TB.

4. Why does the environment—like the workplace, home or playground—play a role in TB exposure?

a. Because people with TB could be anywhere.
b. Because the smaller the environment and the poorer the ventilation, the higher the chance a person has of being exposed to TB.

5. Why does time play a role in TB exposure?

a. Because TB spreads very fast.
b. Because it usually takes a long period of ongoing, constant, and close contact with a person who has TB disease before the other person can become infected with TB.

Post-Test

Name: _____

Title: _____

Today's date: _____

Today's session: **The Basic Facts About TB**

Goal:

- Define the basic facts of TB, including how TB is transmitted.

Objectives:

- Demonstrate through group discussion, the kinds of workers who can be exposed to TB on the job.
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5. Why does time play a role in TB exposure?

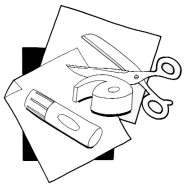
a. Because TB spreads very fast.
b. Because it usually takes a long period of ongoing, constant, and close contact with a person who has TB disease before the other person can become infected with TB.

MODULE 2

The Difference Between TB Infection and TB Disease

TIME REQUIRED **30 minutes**

(45 minutes if optional pre-test and post-test are conducted)



PREPARATION/MATERIALS NEEDED

- ☐ Set up training space. The training room can be set up in many ways. The recommended arrangement is a circle or a U shape so participants can see and interact with one another.
- ☐ Pens, pencils, paper for participants.
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- ☐ Packet of handouts for each participant.
- ☐ Blank flip chart for taking group notes. If no flip chart is available, use blank 8 ½-x-11-inch paper or a dry-erase board.
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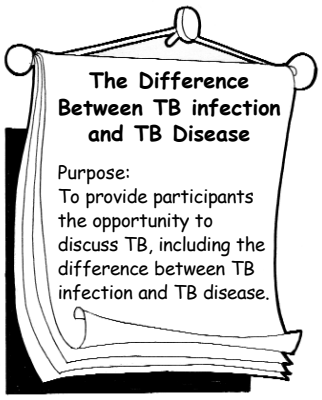
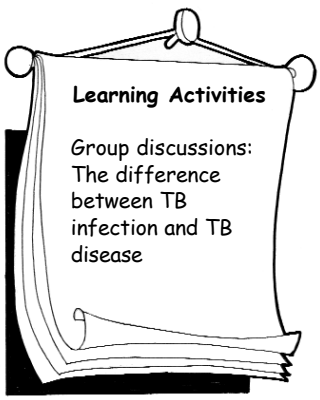




- ☐ *Optional:* Photocopies of pre-test and post-test. Each participant should get one copy of the pre-test before the training starts and one copy of the post-test just after the training has ended.

Welcome and Statement of Purpose

5 minutes

Trainer states out loud:
Welcome to the training on Preventing TB in Long Term Care. Today we're using Module 2. I've written the purpose of today's training on the flip chart.

In this training, you'll have an opportunity to hear more about and discuss the difference between TB infection and TB disease.

Trainer script printed in *italics*

Optional: Pre-Test

5 minutes

Hand out one pre-test sheet per participant. Explain that this pre-test will allow you to assess whether the training is successful. Allow participants to work for a few minutes. Collect all sheets.

Trainer states out loud:
Let's talk about the difference between TB infection and TB disease. TB infection and TB disease are not the same thing. First, let's talk about the symptoms of TB disease. How would we know if a resident, a fellow worker or loved one had TB disease?

Let's take a look at ***Handout 7****. Would someone please volunteer to read the list of symptoms for TB disease?*

A participant reads out loud:

People who have TB disease often experience tiredness, loss of appetite, a cough that just won't go away, unplanned weight loss, fever and night sweats.

Trainer states out loud:
Thanks for reading the list of symptoms. It's also important to know that TB disease often settles in the lungs but can spread to other parts of the body, including the

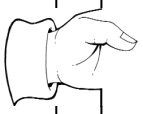
brain, kidneys and bones. When TB develops in other parts of the body, it is not contagious. TB can only be spread to others when TB disease is active in the lungs or larynx (the voice box).

But waiting for symptoms is not the right way to find out whether someone has TB! *And symptoms don't always tell us everything we need to know.*

You'll hear later in Module 4 that the best way to find out if someone has been infected with TB (before the infection turns into disease) is to test the person.

Let's turn now to ***Handout 8.*** *Would someone read out loud the definition of TB infection?*

A participant reads the following definition out loud:



TB infection means that you breathed in TB germs at some point in your life. TB germs stay in your body forever. If you're a healthy person, your body builds a wall against TB germs to keep them from hurting you. This "wall" is your immune system that fights germs.

When you have TB infection, you don't look or feel sick. Millions of people in the U.S. and the world are infected with TB. As long as the germs stay walled up, you can't pass TB on to anyone else. Most people with TB infection stay healthy and never develop TB disease. For every 10 people in the U.S. who have TB infection, only one will develop TB disease.

Trainer states out loud:
Thank you for reading that. The main point of the definition is to stay healthy so that your immune system stays strong. But let's say something happens to our immune system that makes it weak and unable to fight off the TB infection. Then the infection could turn into TB disease.

Let's think for a minute as a group: What could happen to a person's health that would make their immune system weak? Call out your answers, and I'll post them here on the flip chart.

Listen for and post answers like:

- If you get cancer.
- If you have HIV or AIDS.
- If you are old.
- If you drink or smoke.

Trainer states out loud:
Right. Those are things that can make a person's immune system weak. Diseases like cancer and AIDS, or even just growing older, can weaken our immune systems. Look at ***Handout 9,*** *and let's go over several other things that can weaken someone's immune system:*

- *Diabetes*
- *Tobacco use*
- *Alcohol use*
- *End stage renal (kidney) disease*
- *Chemotherapy or radiation*
- *Malnourishment or being underweight*
- *An organ transplant*
- *Steroid use*
- *Using or injecting drugs*

So if you had TB infection from years earlier, but you have one or more conditions like the ones above, you could suddenly find yourself with a weakened immune system and your TB infection could turn into TB disease.

Now using ***Handout 10*** *and the list I have posted on the flip chart here, let's think for a minute about the residents in this facility. How many of you know residents with any of these conditions? Raise your hand if you have patients who:*

- *Have cancer*
- *Have HIV or AIDS*
- *Are older adults*
- *Are alcoholic*
- *Smoke*
- *Have diabetes*
- *Have kidney disease*
- *Have had chemotherapy or radiation therapy*
- *Are malnourished*
- *Are underweight*
- *Have had an organ transplant*
- *Use steroids*
- *Use or inject drugs*

*It looks like many of our residents **have one or more** of these conditions. That means that they could develop TB disease, making them a risk to other residents and workers. It is important to understand how fragile and susceptible to TB some of our residents are. Imagine what would happen if one of our residents got TB germs from you. And imagine what could happen to the residents if a worker has TB infection that goes undiagnosed and/or untreated.*

Resources/Wrap-Up/Questions

5 minutes

Trainer states out loud:
Today we've talked about the difference between TB infection and TB disease. You all did a great job going over a lot of information in a short amount of time. I know some of you may have other questions about TB prevention and treatment, so I'll be around after the training to answer any questions. If you think of other questions, be sure to follow up with your supervisor, your director of nursing or your director of infection control. I've also placed other information about infection control and TB on the table, so you can take information with you.

Thank you all for coming to the training today.

Optional: Post-Test

5 minutes

Now pass out the post-test and give participants about 5 minutes to complete it. Collect all of the post-tests and dismiss participants.

Compare the pre- and the post-tests. If participants answered more questions correctly on the post-test, that is a good indication that they learned new information from this training.

Pre- and post-tests answers for Module 2 is 1. e; 2. e; 3. e; 4. f; 5. e. Make sure not to pass out this answer key to the participants.

Pre-Test

Name: _____

Title: _____

Today's date: _____

Today's session: **The Difference Between TB Infection and TB Disease**

Goal:

- Define the basic differences between TB disease and TB infection.

Objectives:

- Demonstrate through group discussion, the symptoms of TB disease.
- Demonstrate through group discussion, the organs where TB can spread.
- Demonstrate through group discussion, what it means to have TB infection.
- Demonstrate through group discussion, the conditions that can cause the immune system to weaken.

Directions: Please circle your responses. There is only one correct answer for each question.

1. People who have TB disease experience:

a. Tiredness and loss of appetite.
b. A cough that won't go away.
c. Unplanned weight loss.
d. Fever and night sweats.
e. All of the above.

2. TB disease can settle in the:

a. Lungs.
b. Brain.
c. Kidneys.
d. Bones.
e. All of the above.

3. When you have TB infection it means that:

a. You breathed in TB germs at some time in your life.
b. The TB germs will stay in your body forever.
c. Your immune system will fight the TB germs if you are a healthy person.
d. You probably won't develop TB disease.
e. All of the above.

4. A person with a weak immune system can't fight TB infection. The immune system could be weakened because of:

a. Cancer.
b. HIV or AIDS.
c. Old age.
d. Drinking.
e. Smoking.
f. All of the above.

5. Other diseases that could weaken a person's immune system include:

a. Diabetes.
b. Kidney disease.
c. Alcoholism.
d. Drug addiction .
e. All of the above.

Post-Test

Name: _____

Title: _____

Today's date: _____

Today's session: **The Difference Between TB Infection and TB Disease**

Goal:

- Define the basic differences between TB disease and TB infection.

Objectives:

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- Demonstrate through group discussion, the conditions that can cause the immune system to weaken.

Directions: Please circle your responses. There is only one correct answer for each question.

1. People who have TB disease experience:

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a. Lungs.
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a. Cancer.
b. HIV or AIDS.
c. Old age.
d. Drinking.
e. Smoking.
f. All of the above.

5. Other diseases that could weaken a person's immune system include:

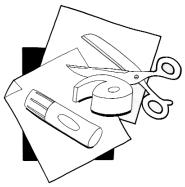
a. Diabetes.
b. Kidney disease.
c. Alcoholism.
d. Drug addiction.
e. All of the above.

MODULE 3

Preventing TB on the Job

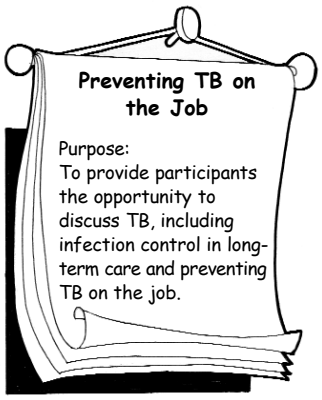
TIME REQUIRED **30 minutes**

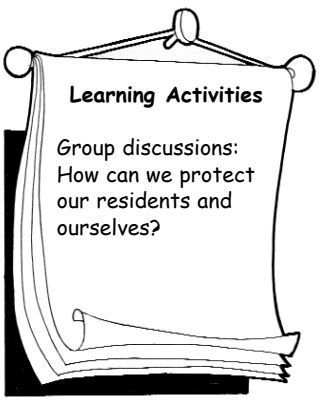
(45 minutes if optional pre-test and post-test are conducted)



PREPARATION/MATERIALS NEEDED

- ☐ Set up training space. The training room can be set up in many ways. The recommended arrangement is a circle or a U shape so participants can see and interact with one another.
- ☐ Pens, pencils, paper for participants.
- ☐ Name tags.
- ☐ Packet of handouts for each participant.
- ☐ Blank flip chart for taking group notes. If no flip chart is available, use blank 8 ½-x-11-inch paper or a dry-erase board.
- ☐ Prepare and post the following information well before the participants enter the room (see diagram below):
  - Title of training
  - Purpose of training
  - Training activities that will occur, including group discussions





- ☐ *Optional:* Photocopies of pre-test and post-test. Each participant should get one copy of the pre-test before the training starts and one copy of the post-test just after the training has ended.

Welcome and Statement of Purpose

5 minutes

Trainer states out loud:
Welcome to the training on Preventing TB in Long Term Care. Today we're doing Module 3, "Preventing TB on the Job." I've written the purpose of today's training on the flip chart. In this training, you'll have an opportunity to hear more about and discuss infection control practices used on the job to prevent the spread of TB.

Trainer script printed in *italics*

Optional: Pre-Test

5 minutes

Hand out one pre-test sheet per participant. Explain that this pre-test will allow you to assess whether the training is successful. Allow participants to work for a few minutes. Collect all sheets.

Trainer states out loud:
We talked about the difference between TB infection and TB disease in Module 2. We also talked about the importance of having a healthy immune system to keep TB infection from becoming TB disease. Would someone volunteer to read the first two paragraphs of ***Handout 11?***

A participant reads the following definition out loud:

> Because our residents may have weakened immune systems, it's easy to see why we must be so careful to protect them from any germs that they could get from us and why we need to protect ourselves from TB infection that we could get from them.
>
> Preventing TB at work is part of the facility's overall infection control plan. Just as that plan spells out procedures for disposing of used bandages or washing your hands between each patient, the plan also spells out how to prevent TB exposure on the job.

Trainer states out loud:
Thank you for reading that. So how can we protect ourselves and protect our residents? Using ***Handout 11,*** *let's look at the three ways to prevent TB exposure on the job. They are done in this order:*

1. ***Identify (through testing) and treat people who have TB infection as soon as possible.***
   - *Each facility must have a program to identify all undiagnosed or untreated TB cases. Patients or workers diagnosed with TB infection will be treated with medication.*
   - *A worker diagnosed with TB disease cannot work in a health-care setting until they receive medication to get rid of the TB disease and can show that they no longer have TB.*

2. ***Use ventilation to get rid of the TB-infected air before it reaches the lungs of workers and patients.***
   - *All patients with TB disease should be kept apart from others in special rooms called isolation rooms. It's important to isolate and treat these people as soon as possible. If a resident is diagnosed with TB disease and the facility doesn't have an isolation room, then the resident is moved to a new facility with isolation rooms. The ventilation systems in these special rooms are set up to suck infected air out of the room before someone else can breathe it in. This is called negative pressure. The air goes directly from the room to the outdoors.*
   - *Other devices like portable machines that filter air or an ultraviolet light that kills TB germs are helpful, but using them alone won't fix the problem. They have to be used in addition to isolation rooms.*

3. ***Wear respirators.***
   When there is no effective way to remove the TB-infected air, then you must be provided with an appropriate respirator. Respirators should also be used around residents with TB disease, even in a negative pressure isolation room.

   Respiratory protection helps you avoid inhaling TB germs. A specific kind of respirator called the N95 particulate respirator should be used by all health care workers when a resident is diagnosed with TB. Only respirators having certification labels from NIOSH should be used to protect against TB.

   Let's take a look at ***Handout 12*** *and* ***Handout 13*** *as we talk more about particulate respirators.*

The rule is that if a respirator must be used, then the facility must:

- *Provide the respirator to you at no charge*
- *Make sure it fits your face correctly*
- *Provide training on the maintenance, care and replacement of your respirator*
- *NOT give you a disposable mask or surgical mask, in place of a particulate respirator. Disposable masks and surgical masks don't protect against TB, see* ***Handout 13****.*

Handout 12 *also shows us an illustration of the particulate respirator. You'll see from the illustration that they are placed over the nose, mouth, and chin and fit snugly. A flexible nose piece fits over the nose bridge. The respirator is secured on the head with an elastic band, preventing leakage around the face.*

The N95 respirator works against TB because it helps prevent the wearer from breathing in airborne particles. It forms a tight seal around nose and mouth, preventing infection from seeping into (or out from) the mask.

Note to trainer:

For additional information about respirators, visit these web sites on the Internet:

- http://www.cdc.gov.niosh/npptl/respirators/respasars.html
- http://www.cdc.gov.niosh/99-143.html
- http://www.cdc.gov.niosh/topics/respirators

Resources/Wrap-Up/Questions

5 minutes

Trainer states out loud:
Today we've talked about how to protect our patients and ourselves from TB infection on the job. You all did a great job going over a lot of information in a short amount of time. I know some of you may have other questions about TB prevention and treatment, so I'll be around after the training to answer any questions. If you think of

other questions, be sure to follow up with your supervisor, your director of nursing or your director of infection control. I've also placed other information about infection control and TB on the table, so that you can take information home with you.

Thank you all for coming to the training today.

Optional: Post-Test

5 minutes

Now pass out the post-test and give participants about 5 minutes to complete it. Collect all of the post-tests and dismiss participants.

Compare the pre- and the post-tests. If participants answered more questions correctly on the post-test, that is a good indication that they learned new information from this training.

Pre- and post-tests answers for Module 3 is 1. e; 2. a; 3. a; 4. d; 5. f. Make sure not to pass out this answer key to the participants.

Pre-Test

Name: _____

Title: _____

Today's date: _____

Today's session: **Preventing TB on the Job**

Goal:

- Define the basic infection control practices that protect workers against TB infection on the job.

Objectives:

- Demonstrate through group discussion, the ways to prevent TB infection on the job.
- Demonstrate through group discussion, those who should be tested for TB infection.
- Demonstrate through group discussion, how often residents and patients should be tested.
- Demonstrate through group discussion, how and where residents with TB disease must be isolated.
- Demonstrate through group discussion, the correct characteristics of a particulate respirator.

Directions: Please circle your responses. There is only one correct answer for each question.

1. How should the facility protect workers from TB infection on the job?

a. Identifying, through annual testing, those residents and workers who have TB infection.
b. Treating those with TB disease.
c. Using ventilation to make the air safer.
d. Providing employees with respirators when anyone in the facility is diagnosed with TB disease.
e. All of the above.

2. Who should be tested for possible TB infection?

a. The residents and all workers.
b. Only the workers.
c. Only those workers who provide direct care to the residents.
d. Only the residents.

3. How often should testing occur?

a. Once a year.
b. Once a month.
c. Every other pay day.
d. At every in-service.

4. Residents diagnosed with TB disease should:

a. Be kept apart from other residents.
b. Be placed in a special ventilated room called a negative pressure room.
c. May have to be moved to another facility if the current facility doesn't have negative pressure rooms.
d. All of the above.

5. Respirators should be used around residents who have TB disease. Respirators should have the following characteristics:

a. Certification by NIOSH or OSHA.
b. Provided to the workers at no extra charge.
c. Fit properly.
d. Maintained by the facility.
e. Replaced by the facility when it's worn out.
f. All of the above.

Post-Test

Name: _____

Title: _____

Today's date: _____

Today's session: **Preventing TB on the Job**

Goal:

- Define the basic infection control practices that protect workers against TB infection on the job.

Objectives:

- Demonstrate through group discussion, the ways to prevent TB infection on the job.
- Demonstrate through group discussion, those who should be tested for TB infection.
- Demonstrate through group discussion, how often residents and patients should be tested.
- Demonstrate through group discussion, how and where residents with TB disease must be isolated.
- Demonstrate through group discussion, the correct characteristics of a particulate respirator.

Directions: Please circle your responses. There is only one correct answer for each question.

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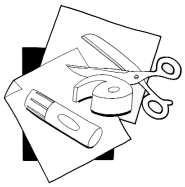
c. Fit properly.
d. Maintained by the facility.
e. Replaced by the facility when it's worn out.
f. All of the above.

MODULE 4

Testing for and Treatment of TB

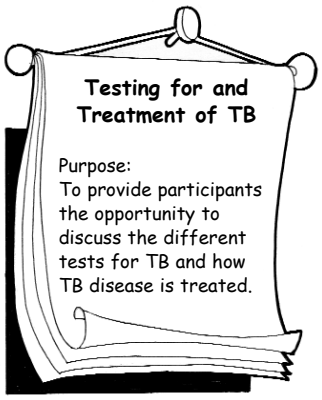
TIME REQUIRED **30 minutes**

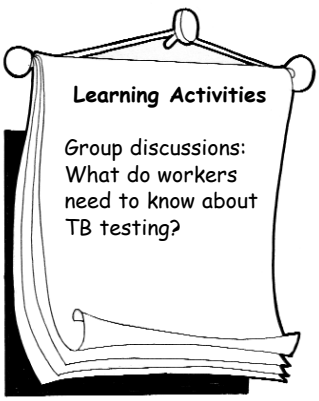
(45 minutes if optional pre-test and post-test are conducted)



PREPARATION/MATERIALS NEEDED

- ☐ Set up training space. The training room can be set up in many ways. The recommended arrangement is a circle or a U shape so participants can see and interact with one another.
- ☐ Pens, pencils, paper for participants.
- ☐ Name tags.
- ☐ Packet of handouts for each participant.
- ☐ Blank flip chart for taking group notes. If no flip chart is available, use blank 8 ½-x-11-inch paper or a dry-erase board.
- ☐ Prepare and post the following information well before the participants enter the room (see diagram below):
  - Title of training
  - Purpose of training
  - Training activities that will occur, including group discussions





- ☐ *Optional:* Photocopies of pre-test and post-test. Each participant should get one copy of the pre-test before the training starts and one copy of the post-test just after the training has ended.

Welcome and Statement of Purpose

5 minutes

Trainer states out loud:
Welcome to the training on Preventing TB in Long Term Care. Today we're working in Module 4, the final module in the TB Training Program. I've written the purpose of today's training on the flip chart. In this training, you'll have an opportunity to hear more about and discuss the different tests used for diagnosing TB infection and TB disease. We'll also discuss how TB infection and TB disease are treated.

Trainer script printed in *italics*

Optional: Pre-Test

5 minutes

Hand out one pre-test sheet per participant. Explain that this pre-test will allow you to assess whether the training is successful. Allow participants to work for a few minutes. Collect all sheets.

Trainer states out loud:
In Module 3, we said the first step we need to take to prevent TB infection on the job is to identify and treat people with TB infection. ***Handout 14*** *explains that the best way to find out if someone has been infected with TB is to test them. Let's use* ***Handout 15*** *for this section on testing. When you are hired in a health-care facility, including long-term care facilities, you will be tested for TB, usually within three days of being hired.*

The TB test—including the cost of the test, the reading of the test and documentation of the test results—is the facility's responsibility. The rule is that when a new employee is hired or a new resident moves into the facility, they will be given a TB skin test. New employees are given a TB test called the Two-Step Tuberculin Skin test, or TST.

Testing should be done at a time and place that are convenient to the worker during work hours. The test results must be read by a trained health-care worker.

The TB skin test can tell whether you have breathed in TB bacteria (also called bacilli) at some point in your life. The test detects TB infection by looking to see if your body has created antibodies in response to TB bacteria. How many of you remember getting your TB skin test when you first started to work in this facility?

Trainer states out loud:
*It sounds like most of you have been tested for TB, so using **Handout 16**, let's look at how the TB skin test works:*

*A small amount of liquid, called tuberculin, is injected under the top skin layer of your forearm. Tuberculin is a purified protein. **It is not a vaccine** and it does not contain any germ cells. The immune system of most people who have TB infection recognizes tuberculin and this will cause a reaction on the skin at the test site. A trained health-care worker will read the results of the test 48 to 72 hours later. Workers should not be expected or asked to read their own test. Remember, it takes a trained health-care worker, like a nurse, to read the test.*

You may have heard of another skin test called the Mantoux PPD. This PPD skin test is very accurate in most people, but sometimes the test doesn't work well in people who have very weak immune systems.

*Many people who were born in other countries or have worked in other countries received a **TB vaccine called the BCG,** which is not used here in the U.S. If you received the BCG vaccination as a child, your screening test will always come back positive whether you have TB infection or not.*

*If you received the BCG, you should let your facility know so they can arrange to have you take the Quantigeron®-TB Gold blood test, a newer TB test that the Food and Drug Administration approved in December 2004. **Handout 17** describes the Quantigeron®-TB Gold blood test. This is a blood test rather than a skin test, and it has a couple of advantages over the PPD skin test. First, it has to be read in a laboratory, which eliminates the need for a staff person at the facility to read the test and decreases the chance of the skin test being misread. Second, the test is not affected by past BCG vaccination. As this test becomes used more and more, it may become the preferred test in health-care facilities. For now, most new employees will probably receive the TST test, but don't forget to tell the facility if you have had the BCG in the past.*

***Handout 18** covers a very important question about BCG: "Why Should I Worry? I've Already Been Vaccinated Against TB." Having the BCG vaccination can give a person a false sense of security. The truth is, it is not clear how long or how well the BCG*

vaccine can protect someone. Remember, employees who work in health care, including long-term care, are required to be tested for TB. And after getting tested, you still want to take necessary precautions—like using a respirator if you need to—even if you have had the BCG vaccination.

Now let's take a look at ***Handout 19*** *which is called "How is the Test Read?" You'll see in the handout that it shows the right way and the wrong way to measure the induration. Let's say for a minute that the measurement of the induration is large enough that it indicates you have TB infection. Remember, being exposed to TB does not mean you have TB disease; it only means that you have been exposed to the TB bacterium and are infected with TB. Remember that earlier we talked about the immune system building a wall around the TB germ? The test shows that your immune system is working and has built a wall.*

Now let's look at ***Handout 20,*** *which talks about what happens if your skin test shows that you have been exposed to TB. The results of the TB skin test are important because if the test shows you may have TB infection, that tells your doctor to look one step further for signs of TB disease. Diagnosing the disease as early as possible is key to protecting your health and the health of the residents, your co-workers and everyone at home and in your community.*

If your test results indicate that you have TB infection, your health-care provider may put you on preventive drugs to help kill the bacteria. And you may be examined for signs of TB disease. An X-ray of your chest might be taken to see if you have any lung damage caused by TB disease, and a sample of sputum (phlegm) from your lungs will be studied to see if TB bacteria are present. You also will need annual checkups to make sure TB disease is not developing in your lungs.

You and your health-care provider will need to watch for the symptoms we discussed earlier, like tiredness, loss of appetite, persistent cough, unplanned weight loss, fever, night sweats and sometimes blood in your spit.

If you have TB disease, you will immediately be given several drugs that you will have to take every day for six months to 24 months. Most TB disease can be cured by taking these drugs. But you have to finish ***all*** *of the drugs in the time period that your doctor prescribes. You can't stop taking the drugs, even if you start feeling better. If you do, TB disease can come back even stronger, making you even sicker and making it harder to treat!*

Resources/Wrap-Up/Questions

5 minutes

Trainer states out loud:
We've just completed Module 4, the final module in the TB Prevention in Long Term Care Training. Using the four modules, we talked about how TB is transmitted, the difference between TB infection and TB disease, how TB infection is diagnosed using skin or blood tests, and, most important, how to protect our patients and ourselves.

You all did a great job going over a lot of information in a short amount of time. I know some of you may have other questions about TB prevention and treatment, so I'll be around after the training to answer any questions. If you think of other questions, be sure to follow up with your supervisor, your director of nursing or your director of infection control. I've also placed other information about infection control and TB on the table, so that you can take information with you.

Thank you all for coming to the training today.

Optional: Post-Test

5 minutes

Now pass out the post-test and give participants about 5 minutes to complete it. Collect all of the post-tests and dismiss participants.

Compare the pre- and the post-tests. If participants answered more questions correctly on the post-test, that is a good indication that they learned new information from this training.

Pre- and post-tests answers for Module 4 is 1. e; 2. d; 3. d; 4. d; 5. e. Make sure not to pass out this answer key to the participants.

Pre-Test

Name: _____

Title: _____

Today's date: _____

Today's session: **Testing for and treatment of TB**

Goal:

- Define the different tests for TB infection and treatments for TB disease.

Objectives:

- Demonstrate through group discussion, the populations that will be tested for TB infection.
- Demonstrate through group discussion, the responsibilities of the facility with regard to TB testing.
- Demonstrate through group discussion, those who should be tested for TB infection.
- Demonstrate through group discussion, how often residents and patients should be tested.
- Demonstrate through group discussion, the various tests available for TB testing.
- Demonstrate through group discussion, the other methods used to determine if someone has TB.

Directions: Please circle your responses. There is only one correct answer for each question.

1. Which of these statements is correct?

a. New employees are tested for TB infection usually within three days of being hired.
b. New residents are tested for TB infection as soon as they are admitted.
c. All employees will be tested once a year.
d. All residents will be tested once a year.
e. All of the above.

2. The facility is responsible for what part of the TB test?

a. The cost of the test.
b. The reading of the test.
c. Documentation of the test results.
d. All of the above.

3. Which one of these statements is correct?

a. TB testing should be done at a time and place that is convenient to the employee.
b. TB testing should be done during the employees' work hours.
c. TB test results must be read by a trained health-care worker such as a nurse.
d. All of the above.

4. Which one of these statements is correct?

a. The Two-Step Tuberculin Skin test or TST is the TB test that most facilities use.
b. Some facilities use another TB skin test called the Mantoux PPD.
c. There is a new and more accurate test for TB called the Quantigeron–TB Gold blood test.
d. All of the above.

5. If an employee's skin test shows that they have been exposed to TB and might have TB infection then:

a. Your doctor may put your on preventive drugs to kill the bacteria.
b. Your doctor may take an x-ray of your chest.
c. Your doctor may examine a sample of phlegm from your lungs to see if TB bacteria are present.
d. You and your doctor will watch for other signs of TB like loss of appetite
e. All of the above.

Post-Test

Name: _____

Title: _____

Today's date: _____

Today's session: **Testing for and treatment of TB**

Goal:

- Define the different tests for TB infection and treatments for TB disease.

Objectives:

- Demonstrate through group discussion, the populations that will be tested for TB infection.
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d. You and your doctor will watch for other signs of TB like loss of appetite
e. All of the above.

Want More Information?

Here are some resources to help you adapt this TB Prevention training module to your facility's circumstances or to share with your staff. Helpful information on TB can be found on the following web sites in Spanish and English. If you don't have a computer, you can visit these web sites with the computers at your public library.

- **CDC**
  www.cdc.gov

- **OSHA**
  www.dol.gov

- **Francis J. Curry National Tuberculosis Center**
  www.nationaltbcenter.org

Preventing TB in Long Term Care

Participant Handouts

Workers Can Be Exposed to TB on the Job

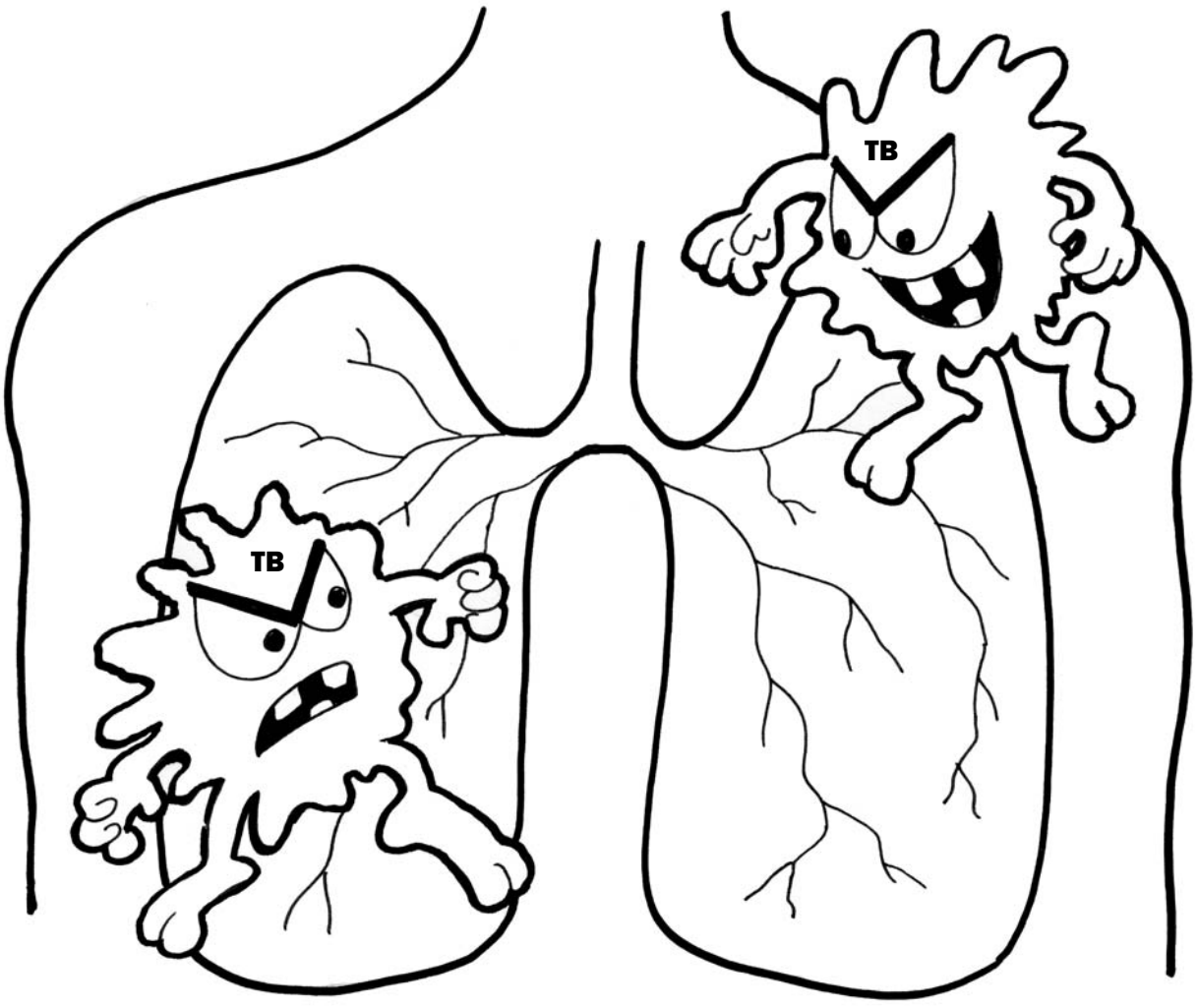
The Centers for Disease Control and Prevention (CDC) says workers in the following settings can be exposed to tuberculosis on the job:

- Workers in long-term care, including nursing homes
- Workers in health-care facilities, including hospitals
- Social services workers, including social workers
- Shelter workers, especially those working in homeless shelters
- Workers in correctional, detention and jail facilities
- Laboratory workers

What is TB?

TB stands for tuberculosis. It is a serious infectious disease caused by a bacterium called Mycobacterium tuberculosis.

Infectious means that you can get it from other people or give it to other people.



How is TB Spread from One Person to Another

A person with TB puts tiny invisible TB germs into the air when they:

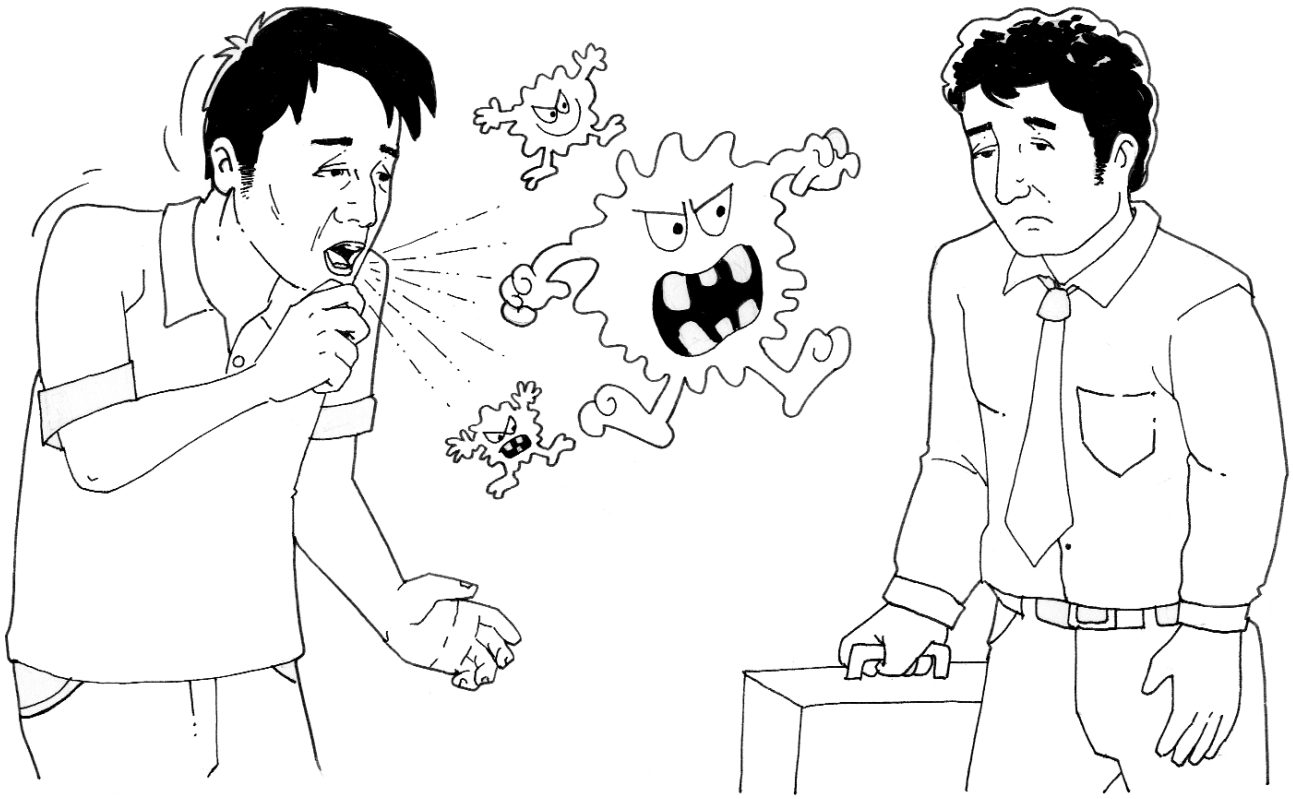
- Cough
- Sneeze
- Talk
- Sing
- Shout
- Spit
- Breathe

If you live or work in a small space with poor ventilation (the windows don't open, or there are no windows) and you share that space with a person who has TB, you are at risk of getting TB yourself.

What Three Things Must Be in Place for Someone to Get TB Infection?

For someone to get TB, three things must be in place:

1. There has to be a person with TB disease who coughs, sneezes, shouts, etc. and releases TB germs into the air.
2. Once in the air, the germs must make their way to …
3. … a susceptible person, including someone with a weak immune system.



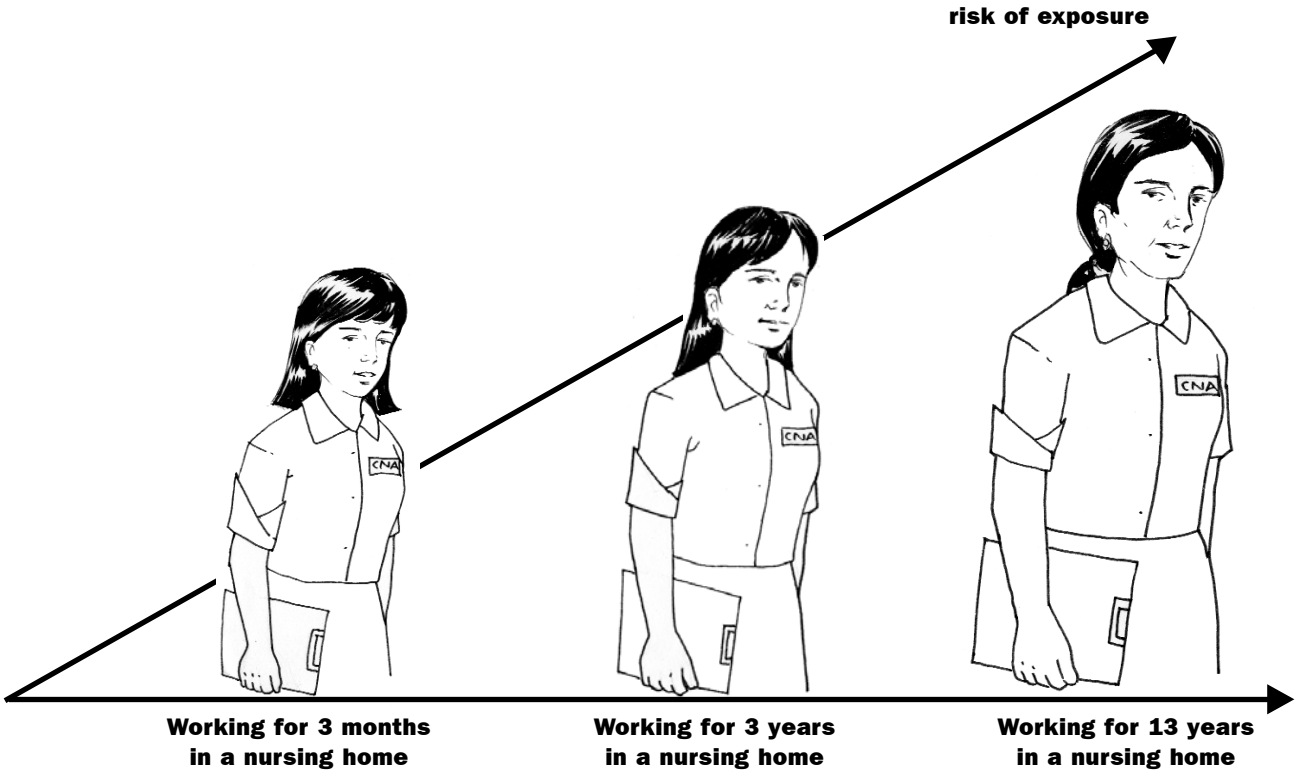
What's Space Got to Do With It?

A single airborne TB droplet may be enough to cause infection in another person who shares air with a person with TB disease. The environment determines the path that TB droplets take after they are airborne. The smaller the space and the poorer the ventilation, the higher the risk.

What's Time Got to Do With It?

Luckily, it usually takes a long time of ongoing (constant) and close contact with a person who has TB disease before you can become infected with TB.

But remember that long-term care facilities and nursing homes are considered high-risk workplaces. For people working in high-risk institutions, the risk adds up over time. The longer you work in long-term care, the greater your risk of becoming infected with TB. That's why training workshops like this, TB testing and infection control are so important.



Risk of being exposed to someone with TB increases over your work life.

What are the Symptoms of TB Disease?

People who have TB disease often experience:

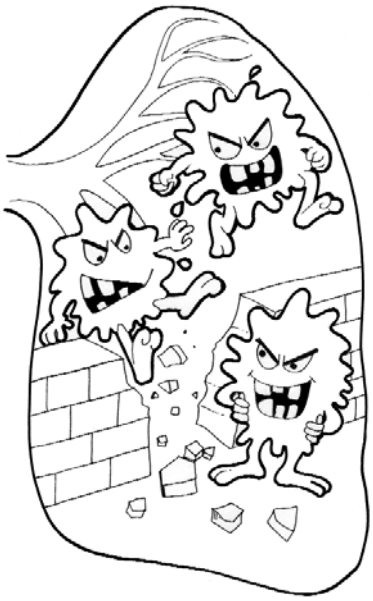
- Tiredness
- Loss of appetite
- A cough that just won't go away
- Unplanned weight loss
- Fever
- Night sweats

Waiting for symptoms is not the right way to find out if someone has TB. And symptoms don't always tell us everything we need to know.

The best way to find out if someone has been infected with TB is to test the person.

The Difference Between TB Infection and TB Disease

TB infection means that you breathed in TB germs at some point in your life. TB germs stay in your body forever. If you are a healthy person, your body builds up a wall against TB germs to keep them from hurting you. This "wall" is your immune system that fights germs.



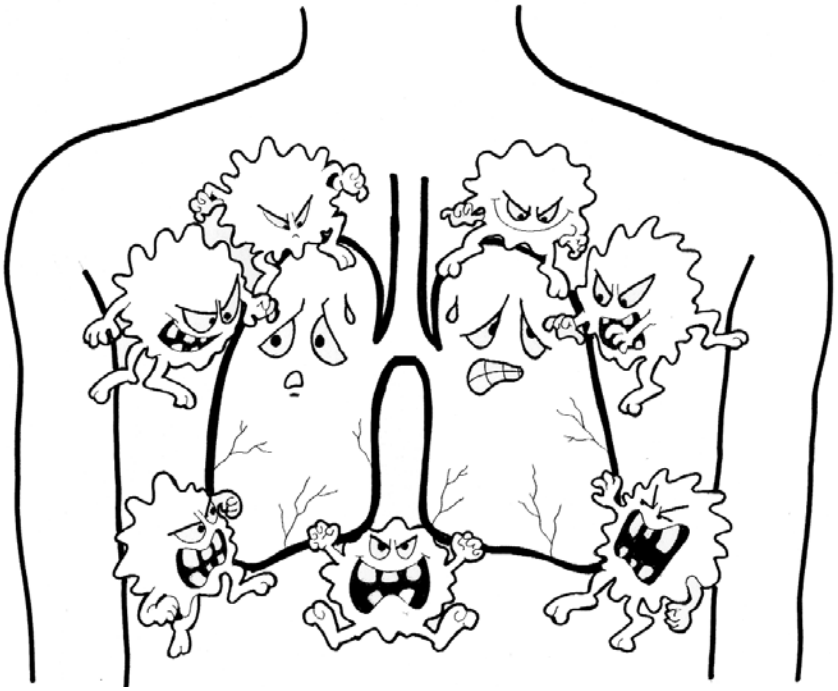
When you have TB infection, you don't look or feel sick. Millions of people in the U.S. and the world are infected with TB. As long as the germs stay walled up, you can't pass TB on to anyone else. Most people with TB infection stay healthy and never develop TB. **For every 10 people in the U.S. who have TB infection, only one will develop TB disease.**

How TB Infection Can Become TB Disease

When something happens to the body's immune system that makes it weak and unable to fight off TB infection (and other infections), then TB infection can turn into TB disease.

Here are some things that can weaken the immune system:

- Diabetes
- Tobacco use
- Alcohol use
- End stage renal (kidney) disease
- Chemotherapy or radiation
- Malnourishment or being underweight
- An organ transplant
- Steroid use
- Using or injecting drugs

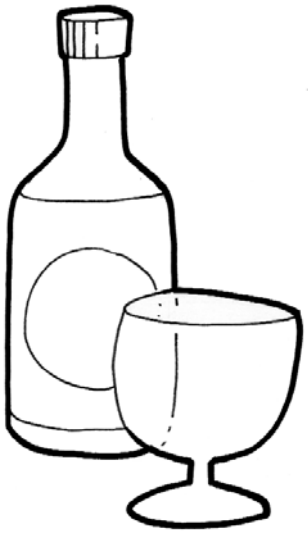


So if you had TB infection from years earlier, but you have one or more conditions like the ones above, you could suddenly find yourself with a weakened immune system and your TB infection could turn into TB disease.

Conditions That Can Put Residents at Risk for TB Disease

Our residents could be at risk for TB disease if they:

- Have cancer
- Have HIV or AIDS
- Are older adults
- Are alcoholic
- Smoke
- Have diabetes
- Have kidney disease
- Have had chemotherapy or radiation therapy
- Are malnourished
- Are underweight
- Have had an organ transplant
- Use steroids
- Use or inject drugs



How Can We Protect Ourselves and Our Residents from TB?

Because our residents may have weakened immune systems, it's easy to see why we must be so careful to protect them from any germs that they could get from us, and why we need to protect ourselves from possible TB infection that we could get from them.

Preventing TB at work is part of the facility's overall infection control plan. Just as that plan spells out procedures for disposing of bloody bandages or washing your hands between each patient, the plan also spells out how to prevent TB exposure on the job.

So how can we protect ourselves and protect our residents?

There are three ways to prevent TB exposure on the job, and they are done in this order:

1. **Identify and treat the people who have TB infection as soon as possible.** Each facility must have a program to identify all undiagnosed or untreated TB cases.

2. Use ventilation to get rid of the TB-infected air before it reaches the lungs of workers and patients.

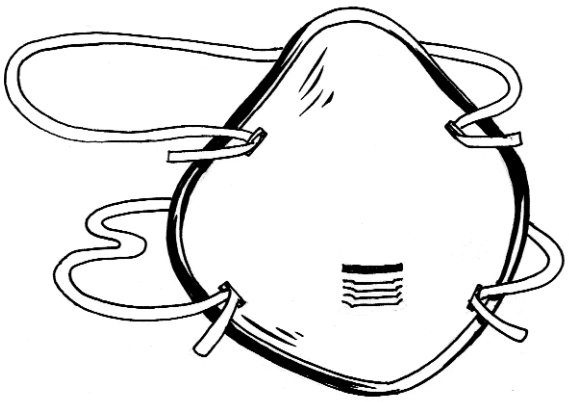
All patients with TB disease should be kept apart from others in special rooms called isolation rooms. It's important to isolate and treat these people as soon as possible. If a resident is diagnosed with TB disease and the facility doesn't have an isolation room, then the resident is moved to a new facility with isolation rooms.

The ventilation systems in these special rooms are set up to suck infected air out of the room before it can be breathed in by someone else. This is called negative pressure. The air goes directly from the room to the outdoors.

Other devises like portable machines that filter air or an ultra-violet light (UV) that kills TB germs are helpful but used alone won't fix the problem. They have to be used in addition to isolation rooms.

3. Workers must wear respirators.

When there is no effective way to remove the TB-infected air, then you must be provided with an appropriate respirator. Respirators should also be used around residents with TB disease, even in a negative pressure isolation room.



Respiratory protection helps you avoid inhaling TB germs. A specific kind of respirator called the N95 particulate respirator should be used by all health care workers when a resident is diagnosed with TB. Only respirators having certification labels from NIOSH should be used to protect against TB.

What Should We Know About Respirators?

The rule is that if a respirator must be used then the facility must:

- Provide you with a respirator certified by NIOSH or OSHA (National Institute for Occupational Safety and Health or the Occupational Safety and Health Administration)
- Provide the respirator to you, the worker, at no charge
- Make sure it fits your face correctly
- Provide training on the maintenance, care and replacement of your respirator

Wouldn't a Surgical Mask Be Easier?

No. The facility must not give you a surgical mask or a disposable mask because they don't work against TB.

Surgical masks are effective only in keeping germs inside your own mask. They are not as effective as the N95 particulate respirator in preventing spread of airborne infection between people. The N95 respirator helps prevent the wearer from breathing in airborne particles because it forms a tight seal around nose and mouth, preventing infection from seeping into (or out from) the mask.

What's the best way to find out if someone has been infected with TB?

The best way to find out if someone has TB infection is to test them.

When you are hired in a health-care facility, including long-term care facilities, you will be tested for TB—usually within three days of being hired.

What Do Workers Need to Know About Testing for TB?

You should know that:
The cost of the test, the reading of the test and the documentation of the test results are all the responsibility of the facility.

You should also know that:
When a new employee is hired or a new resident moves into the facility, they will be given a TB skin test.

New employees are given a TB test called the Two-Step Tuberculin Skin test, or TST.

Testing should take place at a time and location that is convenient to the worker during work hours.

The test results must be read by a trained health-care worker.

The TB skin test can tell if you have breathed in the TB bacteria (also called bacilli) at any point in your life. The test detects TB infection by looking to see if your body has created antibodies in response to the TB bacteria.

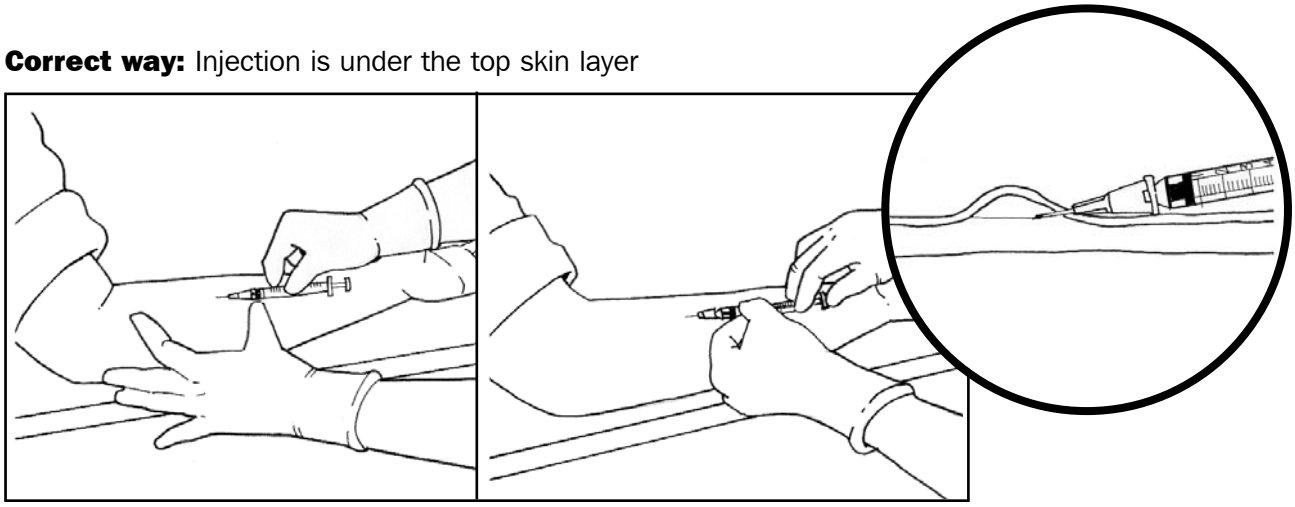
How Does the TB Skin Test Work?

A small amount of liquid, called tuberculin, is injected under the top skin layer of your forearm. Tuberculin is a purified protien. **It is not a vaccine** and it does not contain any germ cells. The immune system of most people who have TB infection recognizes tuberculin and this will cause a reaction on the skin at the test site.

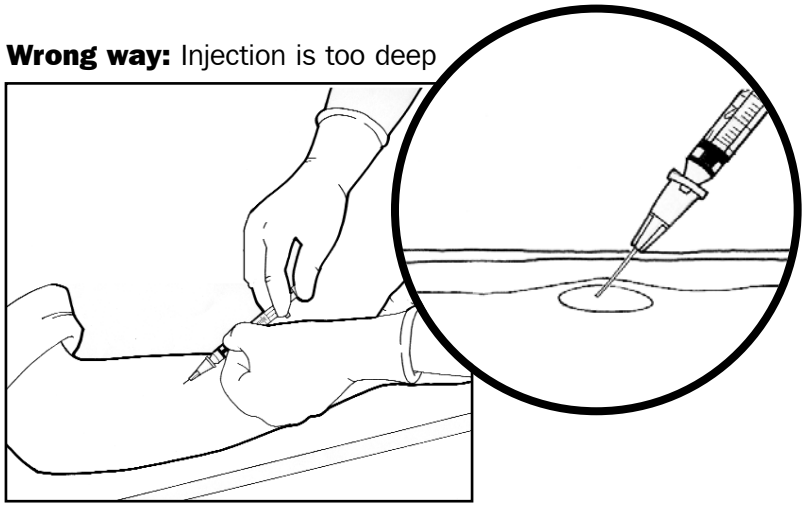
A trained health-care worker will read the results of the test 48 to 72 hours later. Workers should not be expected or asked to read their own test. Remember, it takes a trained health-care worker, like a nurse, to read the test.

The test called the Mantoux PPD skin test is very accurate in most people, but it sometimes doesn't work well in people with very weak immune systems.

Correct way: Injection is under the top skin layer



Wrong way: Injection is too deep



I Heard That There's a New Test for TB

You are right. In December 2004, the Food and Drug Administration (FDA) approved a new TB test called the Quantigeron®-TB Gold.

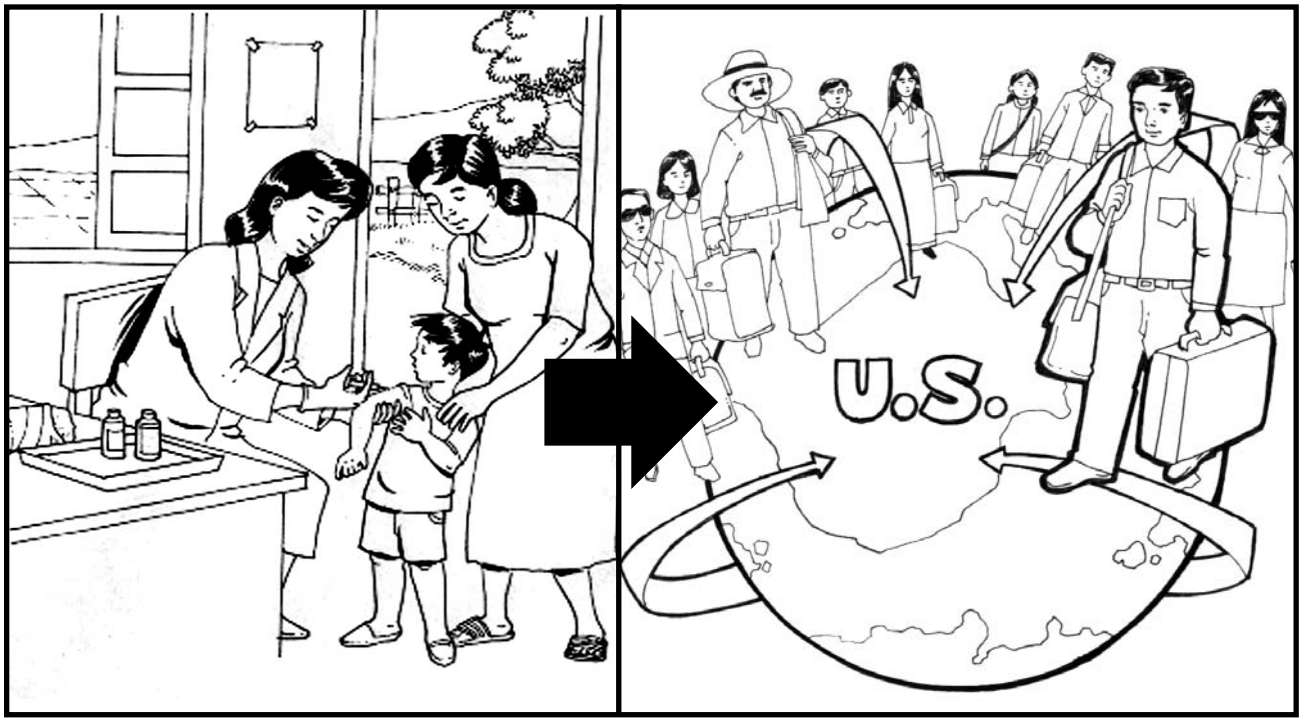
The Quantigeron®-TB Gold is a blood test, rather than a skin test and has a couple of advantages over the PPD skin test:

1. Because it has to be read in a laboratory, it eliminates the need for a staff person at the facility to read the test, decreasing the chance of the skin test being misread.
2. The test is not affected by past BCG vaccination. As this test becomes used more and more, it may become the preferred test in health-care facilities. For now, you will probably receive the TST test.

"Why should I worry now? I was vaccinated when I was a child."

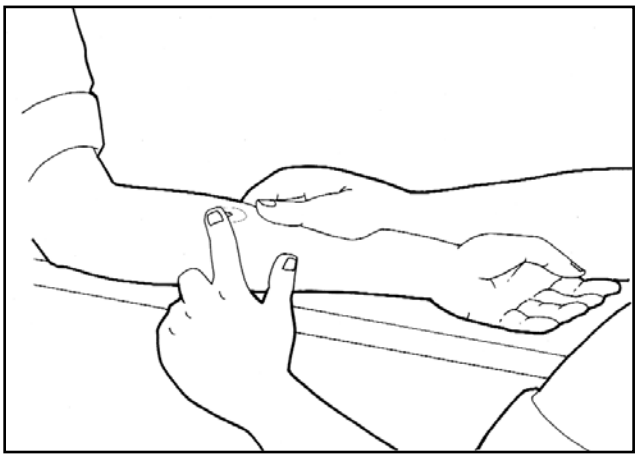
Many people who were born in other countries or who have worked in other countries received a TB vaccine called the BCG when they were young. BCG is not used in the U.S. BCG vaccination makes the TB screening test always come back positive whether you have TB infection or not.

If you received the BCG, you should let your facility know so they can arrange to have you take the Quantigeron®-TB Gold blood test.

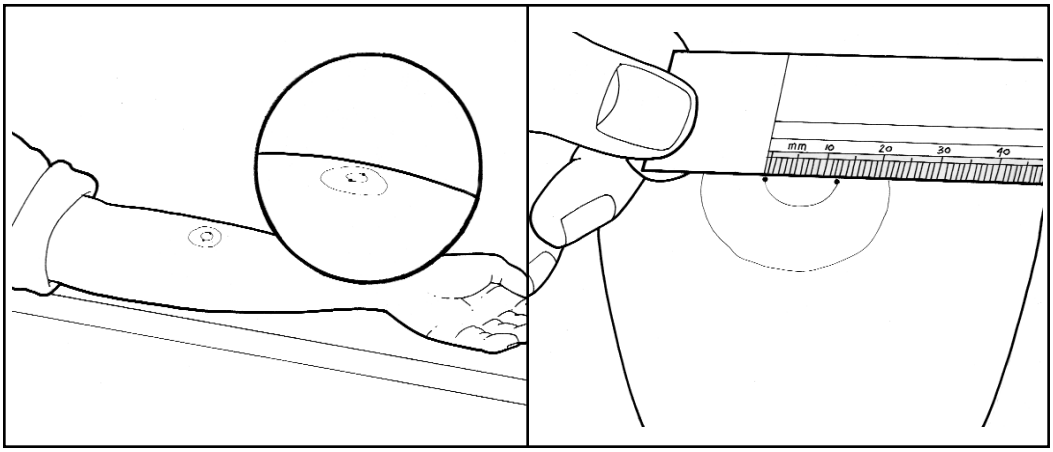


How Is the Test Read?

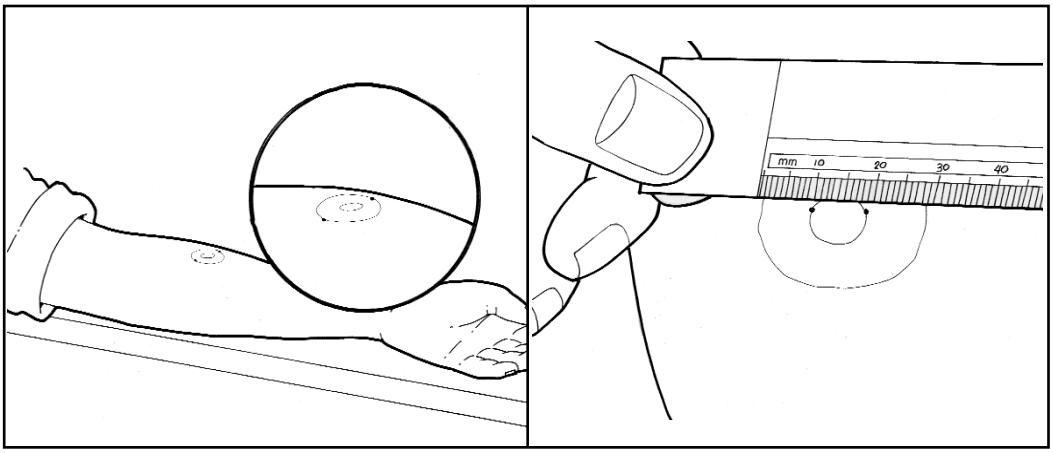
Induration and measurement.



Correct: Measure **only** the induration



Wrong: The entire area is being measured



What Happens If My Skin Test Shows That I Have Been Exposed to TB?

Being exposed to TB does not mean you will get TB disease. The test shows whether you have been exposed to the TB germ and are infected with TB. The test indicates that your immune system is working and has built a wall around the TB germ.

The results of the TB skin test are important because if the test shows you may have TB infection, that tells your doctor to look one step further for signs of TB disease.

Diagnosing the disease as early as possible is key to protecting your health and the health of the residents, your co-workers and everyone at home and in your community.

If you do have TB infection, you may be put on preventive drugs by your doctor to help kill the bacteria.

If you do have TB infection, you may be examined for signs of TB disease. An X-ray of your chest may be taken to see if you have any lung damage.

A sample of sputum (phlegm) from your lungs will be studied to see if TB bacteria are present. You will need annual checkups to make sure TB disease is not developing in your lungs.

You and your health-care provider will need to watch for the symptoms we discussed earlier, like tiredness, loss of appetite, persistent cough, unplanned weight loss, fever, night sweats and sometimes blood in your spit.

If you have TB disease, you will immediately be given several drugs that you will have to take every day for six months to 24 months.

Most TB disease can be cured by taking these TB drugs. But you have to finish **all** of the drugs in the time period that your doctor prescribes. You can't stop taking the drugs, even if you start feeling better. If you do, TB disease can come back even stronger, making you even sicker and making it harder to treat!