

Diagnosed With TB Disease? Information for You and Your Family

English Version



Winnipeg Regional
Health Authority
Office régional de la
santé de Winnipeg

 **Region
of Peel**
working with you

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DEFINITIONS

AIDS (ACQUIRED IMMUNODEFICIENCY SYNDROME) – a disease that weakens the immune system and makes it easier for people to get infections and diseases. It is caused by the human immunodeficiency virus (HIV).

ANTIBIOTIC – a medicine that kills bacteria or stops bacteria from growing. Used to prevent or treat infections and diseases caused by bacteria.

BACTERIA – tiny living organisms that may cause disease; also called germs.

BCG (BACILLUS CALMETTE-GUERIN) – a vaccine for TB that helps prevent serious forms of TB, especially in infants and young children.

BIOPSY – a test to remove a small piece of tissue to look for disease.

BRONCHOSCOPY – a test to look at the lungs and remove liquid or tissue to look for disease; a thin tube is passed down the throat to look inside the lungs.

CHEST X-RAY – a test that takes a picture of the inside of your chest to see if TB bacteria have damaged the lungs.

CONTACT – a person who has spent a lot of time with someone who has contagious, active TB disease (e.g., family, household members, close friends, room mates, classmates, co-workers).

CONTAGIOUS – infectious; can spread TB bacteria to other people.

DOT (DIRECTLY OBSERVED THERAPY) – a program to ensure people with TB take the medicine needed to treat and cure their TB.

GASTRIC WASHINGS – a test to remove liquid from the stomach to look for disease; a thin tube is passed down the throat into the stomach.

HIV (HUMAN IMMUNODEFICIENCY VIRUS) – the virus that causes AIDS.

IMMUNE SYSTEM – cells, tissues and organs in our body that fight or kill bacteria, viruses, parasites and tumour cells that can make us sick; body defenses to protect us from infection and disease.

LTBI (LATENT TB INFECTION) – also called inactive TB; a condition when the person is infected with TB bacteria, but has not developed TB disease. They have no symptoms, do not feel sick and cannot spread the bacteria to others, but they usually have a positive TB skin test.

INDURATION – swelling and hardness that may be felt on the spot where a TB skin test was done.

INFECTIOUS – contagious; can spread TB bacteria to other people.

IGRA (INTERFERON-GAMMA RELEASE ASSAY) – a blood test that is sometimes used to find out if a person has been infected with TB bacteria.

MEDICINE – drugs to treat an infection or disease.

MYCOBACTERIUM TUBERCULOSIS – the bacteria (germs) that cause latent TB infection and active TB disease.

PLEURA – a membrane or covering that surrounds each lung.

RISK FACTOR – something that increases a person’s chances of becoming infected or developing a disease.

SIDE-EFFECT – an unwanted result of a medicine or treatment.

SPUTUM – mucous coughed up from deep inside the lungs; also called phlegm.

SPUTUM INDUCTION – a method used to get sputum from a person who cannot cough up sputum on their own. The person inhales a mist through a mask and it makes the person cough from deep in their lungs.

SYMPTOM – a change in the way the body feels or functions that is noticed by the person who has TB.

TB DISEASE – a disease in which TB bacteria (germs) grow and damage parts of the body and make a person sick; also called active TB.

TB SKIN TEST – also called tuberculin skin test or mantoux test; a test used to find out if a person has been infected with TB bacteria. Testing fluid, called tuberculin or PPD, is injected under the skin on the lower part of the arm, and then 48 to 72 hours later a health care provider looks at the arm and measures any induration.

THE ROLE OF PUBLIC HEALTH

TB is a reportable disease under the Public Health Act. The reason it is reportable is because when TB is growing in your lungs and breathing system, you can spread it to others when you breathe. People around you can be at risk of getting TB and not know it. TB is also a very treatable disease. Public Health wants you to get better. Public Health also wants to prevent the spread of TB to others.

Public Health staff will:

- Ensure you see a doctor for treatment of your tuberculosis (TB) disease
- Work with you and your TB doctor to help you get your TB fully treated
- Work with you and your TB doctor to help you get all the required medical test and appointments
- Supply TB medicines at no cost
- Help you take your TB medicine correctly, until your treatment is completed
- Help you and your TB doctor manage any side-effects from your TB medicine
- Teach you and your family about TB
- Teach you about home or hospital isolation if your TB is infectious to others
- Arrange for people to get tested if they have spent a lot of time around you while you were getting sick with TB (called TB contact investigation)
- Public Health helps people with any kind of TB disease, not just when it is in your lungs or breathing system

GENERAL TUBERCULOSIS INFORMATION

What is Tuberculosis (TB)?

Tuberculosis is a disease caused by tiny germs (bacteria) called *Mycobacterium tuberculosis*. Other names for tuberculosis are “TB,” “consumption,” “white plague” or “Koch’s Disease.”

TB is a serious disease that usually affects the lungs, but can also be found in other parts of the body, such as lymph nodes, kidneys, bones, spine or brain. People with active TB disease usually feel sick, have symptoms and may spread the germs to other people. TB can be fatal if it is not treated properly. TB can be prevented, treated and cured with medicine that kills TB bacteria.

How is TB Spread?

TB germs are spread through the air. When a person has TB germs in their lungs, pleura or throat, they spray the germs into the air when they cough, sneeze, speak, laugh, sing or play a wind instrument.

The TB germs can stay in the air for hours. People who spend a lot of time every day with someone who has active TB, may breathe the germs into their lungs and become infected. These people may live in your home or be family, close friends, co-workers or classmates.



- Not all active TB is contagious. TB that is outside the lungs or throat cannot be spread to other people.
- TB cannot be spread to other people by shaking hands, sharing dishes or utensils, sitting on a toilet seat, using the same towels or by sexual contact.
- Most people who are in contact with TB germs do not become infected or develop TB disease.

Who is at Risk of Getting Infected with TB?

Anyone can become infected with TB. Some people are at higher risk for TB infection. These are people who:

- Are close contacts of someone who has contagious TB
- Are immigrants from countries that have high rates of TB
- Have other illnesses or take medicine that weakens their immune system (e.g., people with diabetes, cancer or HIV/AIDS)
- Are malnourished, homeless, or abuse alcohol or drugs
- Are residents of long-term care or correctional facilities
- Live in First Nations or Inuit communities with high rates of TB

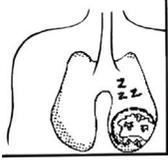
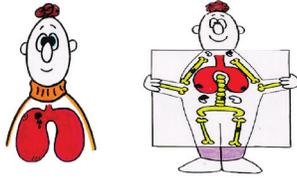
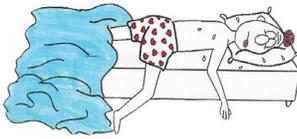
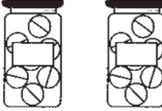
GENERAL TUBERCULOSIS INFORMATION...continued

What is the Difference between Latent TB Infection (LTBI) and TB Disease?

People with latent TB infection (LTBI) have germs in their body that are sleeping (dormant or inactive). They are not sick and cannot spread TB to other people. However, they can become sick with TB disease in the future. Latent TB infection can be treated to prevent TB disease.

People with active TB disease have TB germs in their bodies that are growing and spreading. They are sick and can spread TB to other people if the active disease is in their lungs or throat. TB disease can be treated with medicine that kills the TB germs. The medicine must be taken for many months to kill all the TB germs and cure the disease.

TUBERCULOSIS: KNOW THE DIFFERENCE

LATENT TB INFECTION (LTBI)	TB DISEASE
 <p>TB GERM IS ASLEEP</p> <p>You have the germs in your body, but your body has stopped the germs so they cannot do any damage.</p>	 <p>TB GERM IS DOING DAMAGE</p> <p>TB germs are multiplying and causing damage. TB usually causes disease in the lungs, but it can also affect other organs</p>
<p>POSITIVE SKIN TEST</p>  <p>You have a positive skin test, but your chest X-ray shows no TB disease. You could develop TB disease in the future.</p>	<p>SYMPTOMS</p>  <p>You are sick. Symptoms include:</p> <ul style="list-style-type: none"> • weakness, fever, weight loss • cough, chest pain • coughing up blood (if TB is in the lungs) • pain (if TB is in other parts of the body)
 <p>NO</p> <p>CONTAGIOUS?</p> <p>You are not contagious and you are not sick.</p>	 <p>YES</p> <p>CONTAGIOUS?</p> <p>You are contagious if the TB germ is in your lungs.</p>
<p>TREATABLE</p>  <p>PREVENT TB DISEASE</p> <p>TB infection can be treated with medication. Treatment will prevent TB disease from developing. The length of treatment can depend on which medication is best for you.</p>	<p>TREATABLE</p>  <p>CURE AND PREVENT SPREAD</p> <p>TB disease is treatable and curable as long as you take all your medication. Early treatment prevents the spread of TB to others.</p>

Egghead artwork used with permission of Alberta Health

**A TB skin test
cannot cause TB.**

LATENT TUBERCULOSIS INFECTION (LTBI)

What is Latent TB Infection (LTBI)?

A person with latent TB infection (LTBI) has breathed in TB germs, but is not sick because their immune system has stopped the TB germs from growing and spreading. The TB germs remain alive, but are sleeping (dormant, inactive) in the body. The World Health Organization (WHO) estimates that one-third of the world's population is infected with TB germs and has LTBI.

People with LTBI:

- Are not sick
- Have no symptoms
- Cannot spread TB germs to others
- Can go to work and school, and do all their usual activities
- Could develop active TB disease in the future, especially if their immune system becomes weak



About one in 10 people who have LTBI will develop active TB disease at some time in their life. The risk is greatest in the first two years after they have been infected with the germs.

How are you Tested for LTBI?

A TB skin test is done by a doctor or nurse to see if there are TB germs in your body. A testing fluid, which contains TB proteins, is injected under the skin with a small needle. If you are infected with TB germs, the area where the fluid was injected may swell and feel hard (induration) within 48 to 72 hours. More tests, such as a chest X-ray and a physical examination, are done to make sure you do not have active TB disease. In special circumstances a blood test, called Interferon-Gamma Release Assay (IGRA), may be recommended by the doctor to help diagnose LTBI.

A TB skin test cannot cause TB. Someone who had a BCG vaccine or is pregnant can receive a TB skin test. The TB skin test is done free of charge for people who are contacts of someone with active TB disease.

Is there Treatment for LTBI?

A doctor may prescribe TB medicine to prevent LTBI from progressing to TB disease. This medicine is provided free of charge to health care providers to give to their patients.

PROGRESSION OF LATENT TUBERCULOSIS INFECTION TO TUBERCULOSIS DISEASE

When does Latent TB Infection Progress to TB Disease?

Some people with LTBI will develop active TB disease when their immune system is not strong enough to prevent the TB germs from growing and spreading.

Who is most At-Risk to Develop TB Disease?

People who have LTBI and have a weak immune system are more likely to get active TB disease. The elderly, babies and children less than five years old may have weaker immune systems.

The following conditions may also weaken or alter the immune system:

- HIV infection and AIDS
- diabetes
- severe kidney disease
- silicosis
- cancer
- organ transplants
- drugs and treatments that alter the immune system (e.g., glucocorticoids, some treatments for arthritis, crohn's disease and psoriasis)
- low body weight

Also more likely to get active TB disease are persons who:

- have old TB on their chest X-ray that was not treated or cured in the past
- have been infected with TB bacteria within the past two years
- smoke cigarettes

TB can be prevented, treated and cured. Antibiotics that prevent and treat TB are provided free of charge to health care providers to give to their patients.

Active TB disease can develop anywhere in the body, such as in the lungs, pleura, throat, lymph nodes, kidneys, bones, brain, spinal cord and abdomen.

TUBERCULOSIS DISEASE

What is TB Disease?

When the immune system becomes weak, TB germs can become active. They grow, spread and destroy tissue in the body. Some people become sick with TB shortly after being infected with TB germs, while others may not get sick until many years later.

TB disease can develop anywhere in the body, such as in the lungs, pleura, throat, lymph nodes, kidneys, bones, brain, spinal cord and abdomen. People with active TB usually have symptoms and feel sick. They are given medicine to treat and cure the TB disease. They take the medicine for six to 12 months or longer.

What Are the Symptoms of Active TB Disease?

The **most common symptoms** of active TB disease include:

- fever, chills
- weight loss, loss of appetite
- weakness, fatigue
- night sweats

People with **TB in the lungs, pleura or in the throat** may also:

- have a new or worsening cough lasting three weeks or longer
- cough up sputum or blood
- have chest pain

People with **TB outside the lungs** may have:

- unexplained pain that won't go away, such as in the bones, joints, abdomen, back
- a lump, often on the side of the neck
- swelling in bones or joints
- headaches, stiff neck, dizziness

People with **TB disease in their lungs, pleura or throat** are contagious and can spread TB germs to others when they cough, sneeze, speak, laugh, sing or play a wind instrument. Special precautions are required to prevent spreading TB germs to others. The Public Health Nurse will teach you about the precautions that must be taken and for how long.

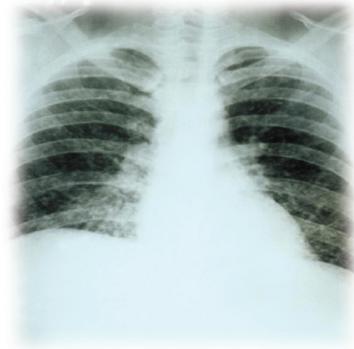
TB outside the lungs is usually not contagious and cannot be spread to others because the TB germs cannot get into the air to be breathed in by other people. Usually no special precautions are required.

TUBERCULOSIS DISEASE...continued

How is TB Disease Diagnosed?

A doctor diagnoses TB disease by asking you questions, listening to your concerns, and doing medical tests and an examination:

- Medical History – past history of TB infection or disease, past contact with someone who had TB disease, risk factors for infection and disease, other health problems and medicine taken
- Symptoms – a change in your body
- Chest X-ray, CT scans, MRI scans – to look for signs of TB in the lungs and other parts of the body
- Sputum (phlegm or mucous) from the lungs – to send to the laboratory to look for disease
- Bronchoscopy – a test to look at the lungs and remove liquid or tissue to look for disease
- Gastric washings – a test to remove liquid from the stomach to look for disease
- Biopsy – a test to remove a small piece of tissue to look for disease



What is Clinical TB?

Sometimes the lab tests on sputum (phlegm), tissue or body fluids do not show TB germs, but the doctor still thinks the person has active TB disease because of their history, symptoms, X-rays and other tests. This is called Clinical TB.

When the lab tests on sputum (phlegm), tissue or body fluids show TB germs, it is culture-confirmed TB or lab-confirmed TB.

What is Drug-Resistant TB?

Germs that can be killed by a specific medicine are said to be “sensitive” to that medicine. Germs that cannot be killed by a specific medicine are said to be “resistant” to that medicine.

TB is treated with several medicines at the same time that will kill TB germs or stop them from growing. When TB germs are resistant to one or more of the medicines normally used to treat and cure TB, the TB is considered resistant. This means these medicines cannot kill or stop the TB germs from growing. TB that is resistant to medicine is usually more difficult to treat. Drug-resistant TB can usually be cured, but it takes longer and the medicines may cause more side-effects.

The two best medicines to treat TB are Isoniazid and Rifampin. When TB germs are resistant to both Isoniazid and Rifampin, the TB is multi-drug resistant (MDR-TB). When TB germs are resistant to Isoniazid and Rifampin, plus certain other antibiotics, the TB may be extensively drug-resistant (XDR-TB).

TUBERCULOSIS DISEASE...continued

How do I get Drug-Resistant TB?

You get drug-resistant TB when:

- you breathe in TB germs from someone who has drug-resistant TB disease
- you do not take your TB medicine properly so the TB germs change and resist the medicine
- you have been given the wrong medicine or the wrong dosage
- you develop active TB disease again, after being treated in the past

How do I Prevent Drug-Resistant TB?

To prevent drug resistance you must:

- take every dose of TB medicine
- take the TB medicine until your TB doctor or nurse tells you to stop
- continue to take your medicine even when you start to feel better; it takes many months to kill all the bacteria and cure TB disease
- see a doctor who is a specialist in the treatment of TB and drug-resistant TB

TREATMENT OF TB DISEASE

TB disease can be treated and cured by taking a combination of several medicines for six months or longer. How long you are on treatment depends on where the TB is in your body, how sick you are and whether the TB germs are resistant to any TB medicine. You will have regular appointments with your TB doctor or nurse and they will send you for blood tests, X-rays or other tests to monitor how the TB medicine is working and to watch for serious side-effects.

You will be isolated to protect others from the TB germs if the TB is in your lungs, pleura or throat. Usually you can be isolated at home, but sometimes you may need to go into the hospital.

A Public Health Nurse will visit to teach you and your family about TB, TB medicine and their side-effects. The Public Health Nurse will supervise your case until you are finished your treatment. Directly Observed Therapy (DOT) will be arranged to help you take your TB medicine correctly, watch for side-effects and help you attend all your medical appointments and tests.

Important:

- Tell your doctor:
 - about all the medicine, supplements and herbal products you take
 - if you are allergic to any medicine or food
 - about all your health problems, such as diabetes, kidney failure, liver disease, hepatitis, thyroid disease, eye problems, gout, arthritis, HIV/AIDS, etc.
 - if you were given treatment for TB in another province or country, or if you were ever given antibiotics for a long period of time
 - if you are pregnant or breastfeeding, or if you are planning to get pregnant
- Prevent pregnancy while taking TB medicine
- Attend all medical appointments – you need to be monitored regularly by your doctor while taking TB medicine
- Have all medical tests done when ordered – this includes blood tests to ensure your liver is healthy and chest X-rays if the TB is in your lungs
- Before starting any other medicine, supplements or herbal remedies, you should check with your doctor or pharmacist to ensure it is safe to take them while on TB medicine

Tuberculosis in children is caused by exposure to adults with contagious TB.

PREVENTING AND TREATING TUBERCULOSIS DISEASE IN CHILDREN

Preventing TB in Children

The impact of undiagnosed or untreated TB in children is serious. Children are more likely than adults to develop TB disease soon after infection and are also more likely to develop severe forms of TB.

For children who are identified as contacts of a contagious case of TB:

- Two TB skin tests are generally recommended – one test is done immediately and a second test is done eight to 12 weeks after contact with the TB case. The Public Health Nurse will tell you when the second TB skin test should be done.
 - If the first or second TB skin test is positive and the chest X-ray is normal, your child has Latent TB Infection (LTBI) and should take medicine for nine months or as directed by their doctor.
 - If the first and second TB skin test are both negative, your child has not been infected with TB germs.
- Children four years old and under should:
 - Have a chest X-ray and a medical examination by a Children’s TB Specialist, even if their first TB skin test is negative.
 - Be started on medicine right away to protect them from getting TB disease, even if the first TB skin test is negative and the chest X-ray is normal. Young children need this medicine because they have lower immunity than older children and adults, and may get very sick while waiting for the second test.
 - Continue this medicine until the second TB skin test is done. Your child needs to stay on the medicine until the second test shows whether or not they have been infected. The medicine can be stopped if the second skin test is negative.

TB Disease in Children

Tuberculosis in children is caused by exposure to adults with contagious TB. Children four years old and under often do not have signs and symptoms of TB disease and are not usually contagious. Diagnosis of active TB disease is usually made based on abnormalities seen on the chest X-ray.

Older children and adolescents may have symptoms, such as fever, cough, night sweats, pain and/or swelling, weight loss, and changes in energy level and appetite.

PREVENTING AND TREATING TUBERCULOSIS DISEASE IN CHILDREN...continued

Treatment of Active TB Disease in Children

The medicine used to treat active TB disease in children is similar to the medicine used to treat adults. The medicine may be prescribed in liquid form for young children and is based on the child's weight. Tell the doctor if your child gains or loses weight.

The health worker will provide Directly Observed Therapy (DOT) and will visit with you and your child to ensure that your child is:

- Taking the medicine as prescribed
- Tolerating the medicine
- Has enough medicine

Managing Side-Effects

TB medicine is usually safe, but some children may get side-effects. Stop the medicine and call your doctor or nurse immediately if your child develops:

- Nausea
- Vomiting
- Rash
- Stomach ache
- Yellow eyes or skin
- Loss of energy

Tips to help your child swallow the medication

- Crush pills or empty capsules into a bowl with a small amount of soft food, such as applesauce, mashed bananas, yogurt, pudding or baby food
- Use a medicine cup or syringe (without needle) to measure liquid medicine
- Praise your child when they swallow the medicine
- Give small rewards, such as stickers

Medicine used to treat TB disease in children is similar to the medicine used to treat adults.

ISOLATION FOR CONTAGIOUS TUBERCULOSIS

DO I NEED TO BE ISOLATED?

YES () NO ()

If you have TB in your lungs, pleura or throat, you could spread the germs to others when they breathe in the air around you after you cough, sneeze, talk, laugh, sing or play a wind instrument. You must protect others from the TB germs by isolating yourself. TB in other parts of the body is not usually contagious and does not require isolation. TB is not spread by sharing utensils, plates, cups, clothing, bed linen, furniture, toilets or by shaking hands.

What is home isolation?

You must stay at home and away from other people to stop the spread of TB germs and protect people around you. You must not:

- go to work, school, places of worship, restaurants, movie theatres, grocery stores, shopping malls or any other public place
- visit friends or relatives
- ride on buses, subways, trains or airplanes
- have visitors to your home, such as friends or relatives

How long will I be isolated?

Home isolation will last until you are no longer contagious and cannot spread TB germs to other people. This may be for as short as two weeks or as long as a few months. How long you are contagious depends on how many TB germs are in your lungs, how sick you are and how well your body uses the TB medicine. Sputum tests, chest X-rays and symptom improvement will tell us when you are no longer contagious. Take every dose of your TB medicine to help you get out of isolation faster. The Public Health Nurse will tell you when it is safe to be around other people and go back to work or school.

How do I protect my family?

- Take your TB medicine until the TB doctor tells you to stop
- Stay away from young children and people with weak immune systems as they can catch TB very easily
- Cover your mouth and nose with tissues or your sleeve when you cough or sneeze, and immediately throw the used tissues in the garbage

How can I protect other people like friends and neighbours?

- Stay at home
- Do not have visitors
- Stay away from public places
- Wear a surgical mask when you go to see your doctor and for lab tests and X-rays
- If you are picked up by an ambulance, tell the paramedics and the hospital emerge that you have TB so they can take the necessary precautions

You can go outside for short walks in your neighbourhood without wearing a mask, but stay away from other people.



This is a surgical or procedural mask.

MEDICINES TO TREAT AND CURE TUBERCULOSIS

These are the common medicines used to treat TB. In some situations you may be given medicine not listed here. The Public Health Nurse will give you information about those other medicines, if needed. For complete instructions and information about your medicine and their side-effects, talk to your doctor or a pharmacist.

	Medication	# Taken	Dosage
	<p>ISONIAZID (ISOTAMINE, INH)</p> <ul style="list-style-type: none"> This medicine is used to prevent tuberculosis (TB) and treat TB disease. It can affect your liver. 		
	<p>RIFAMPIN (ROFACT, RIFADIN, RMP)</p> <ul style="list-style-type: none"> This medicine is used to prevent TB and treat TB disease. It will turn tears, sweat and urine an orange colour. If contact lenses are worn, they could get stained. It causes birth control pills to be less effective. Condoms should be used. 		
	<p>PYRAZINAMIDE (TEBRAZID, PZA)</p> <ul style="list-style-type: none"> This medicine is used to treat TB disease. It can cause pain in your joints. 		
	<p>ETHAMBUTOL (ETIBI, EMB)</p> <ul style="list-style-type: none"> This medicine is used to treat TB disease. It can affect your eyesight. You should have your vision checked by a doctor if you have been taking this medication for a long time and in high doses. 		
	Vitamins		
	<p>PYRIDOXINE (Vitamin B6)</p> <ul style="list-style-type: none"> This medicine is used to prevent damage to the nerves caused by the medicine Isoniazid. 		

NOTES: _____

MEDICINES TO TREAT AND CURE TUBERCULOSIS...continued

Why should I take my TB medicine?

TB disease can be cured if you take your TB medicine as directed. You may have to take your TB medicine for six months to two years. It is important to take all your TB medicine until your TB doctor or nurse tells you to stop. You must continue taking your TB medicine even if you are feeling well. Although you may be feeling well, it does not mean the disease is completely gone. If you stop taking your TB medicine too soon, you may not be cured. The TB germs may become stronger and drug-resistant.

How do I take my TB medicine?

- TB medicine is prepared by the pharmacy into blister packaging
- Liquid TB medicine is prepared into single dose syringes
- The TB medicine is sent directly to your Public Health office or Nursing Station
- Your Public Health Nurse or Nursing Station will discuss with you how your Directly Observe Therapy (DOT) will be arranged
- It is important to take all of your TB medicines as prescribed
- Most people tolerate TB medicine well
- Taking TB medicine with a small amount of food often reduces any stomach upset
- If you vomit within 30 minutes of taking your TB medicine or you can see the medicine in the vomit, contact your nurse
- If you develop any new health issues after starting your TB medicine, contact your nurse
- If your new health issues are severe, go to your nearest emergency department and tell them you are taking TB medicine
- Avoid drinking alcohol or taking Acetaminophen or Tylenol while on your TB medicine



MEDICINES TO TREAT AND CURE TUBERCULOSIS...continued

What if I miss a dose of my medication?

If you miss a dose of your TB medicine, it will take you longer to finish your treatment. Two doses are never taken at one time or close together. Your PHN will tell you how a missed dose will be made up. Missing several doses will affect how well the medication will work.

What if I vomit after taking my medication?

If you vomit within 30 minutes of taking your medication or you can see medicine in the vomit, the dose is not used by your body. Let your health worker or PHN know that you have vomited. Your nurse will explain how the dose will be repeated or made up.

Will TB Medicine Cause any Side-Effects?

Medicine can sometimes cause unwanted side-effects. In most cases, they are not serious, but some side-effects require medical attention. If you develop any side-effects, report them to your doctor, PHN or HOW. Watch for:

- itching, skin rash, hives, trouble breathing, swelling of the face or throat, tingling or numbness around the mouth
- tingling or numbness of fingers or toes
- fever for three days or more
- flu-like symptoms (fever, chills, dizziness, weakness, muscle aches)
- new cough
- loss of sensation or muscle control
- aching, painful or swollen joints
- loss of appetite
- fatigue, feeling very tired or weak
- upset stomach, nausea, vomiting
- stomach cramps or abdominal pain
- diarrhea
- yellow skin or eyes (jaundice); very dark urine
- bruising or easy bleeding from cuts
- blurred vision, trouble telling the difference between red and green (colour blindness), or other changes in your vision
- feeling dizzy or unsteady

Other side-effects not listed may also occur.

Important: If you notice any symptoms or you think you have a side-effect to your TB medicine, contact your doctor or nurse. If you have serious side-effects during evenings, weekends or holidays call Health Links-Info Sante at 204-788-8200 or 1-888-315-9257, or visit the nearest Emergency Department.

MEDICINES TO TREAT AND CURE TUBERCULOSIS...continued

Isoniazid (Isotamine)

Isoniazid is an antibiotic that kills TB germs. It can be used to:

- Treat active TB disease in combination with other TB medicine
- Treat latent TB infection (LTBI)

What should I know about taking this medicine?

- Take this medicine with a full glass of water on an empty stomach (one hour before food or two hours after food). If it upsets your stomach take it with a small amount of food.
- A liquid form of the medicine is available if you have trouble swallowing the pills.
- Take this medicine at least two hours before you take an antacid.
- Vitamin B6 may be given to prevent numbness/tingling feeling in your fingers and toes.
- Some medicines for epilepsy and seizures (e.g., Dilantin) do not work as well while taking Isoniazid.
- Red wine, some aged cheeses (e.g., Swiss, Cheshire) and fish (tuna, skipjack, sardines) may cause flushing/redness or itching of the skin, feeling hot, fast or pounding heartbeat, sweating, chills or clammy feelings, headache or feeling lightheaded.
- Mild stomach upset is common.

Watch for:

- Nausea, vomiting, loss of appetite, abdominal pain
- Fatigue or feeling tired, weakness
- Fever for three days or more
- Numbness or tingling feeling in the fingers and toes
- Itching, skin rash
- Dark urine, yellow eyes or skin (jaundice)
- Other side-effects not listed may also occur in some people. If you notice other symptoms or side-effects contact your doctor for advice.

Rifampin (Rofact, Rifadin)

Rifampin is an antibiotic that kills TB germs. It can be used to:

- Treat active TB disease in combination with other TB medicine
- Treat latent TB infection (LTBI)

What should I know about taking this medicine?

- Take this medicine with a full glass of water on an empty stomach (one hour before food or two hours after food). If it upsets your stomach, take it with a small amount of food.
- Take the capsule whole if possible. If you have trouble swallowing the capsule, it can be opened and mixed with a small amount of soft food, such as applesauce, pudding or yogurt.
- A liquid form of the medicine is available if you have trouble swallowing the capsule.

MEDICINES TO TREAT AND CURE TUBERCULOSIS...continued

- Birth control pills do not work as well while taking rifampin. Use other methods of birth control to prevent pregnancy.
- It may turn body fluids (urine, sweat, tears, saliva and feces) dark yellow or orange-red colour. This is not harmful and will go away at the end of your treatment, however, soft contact lenses and clothing may be permanently stained.
- Mild stomach upset is common.

Watch for:

- Nausea, vomiting, loss of appetite, abdominal pain
- Fatigue or feeling tired, weakness
- Fever for three days or more
- Flu-like symptoms (fever, chills, dizziness, weakness)
- Itching, skin rash
- Dark urine, yellow eyes or skin (jaundice)
- Bone or joint pain
- Changes in menstruation
- Other side-effects not listed may also occur in some people. If you notice any other symptoms or side-effects contact your doctor for advice.

Ethambutol (Etibi)

Ethambutol is an antibiotic that stops the growth of TB germs. It can be used to:

- Treat active TB disease, in combination with other TB medicine

What should I know about taking this medicine?

- Swallow the tablets whole, if possible, with water or juice. It is best not to crush or chew the tablets.
- It can be taken with or without food.
- Do not take antacids within four hours of taking this medicine.
- If you take this medicine for a long time, your doctor will arrange to have your eyes checked.
- Report any changes in vision to your doctor immediately.

Watch for:

- Blurred vision, trouble telling the difference between red and green (colour blindness), eye pain or any other eye problems
- Sudden confusion
- Dizziness, fatigue
- Fever
- Nausea, vomiting, loss of appetite, abdominal pain
- Itching, skin rash
- Pain or swelling of joints
- Other side-effects not listed may also occur in some people. If you notice any other symptoms or side-effects contact your doctor for advice.

MEDICINES TO TREAT AND CURE TUBERCULOSIS...continued

Pyrazinamide (Tebrazid)

Pyrazinamide is an antibiotic that kills TB bacteria. It is used to:

- Treat active TB disease, in combination with other TB medicine

What should I know about taking this medicine?

- Swallow the tablets whole, if possible, with water or juice. It is best not to crush or chew the tablets.
- It can be taken with or without food.
- It may cause skin to become sensitive to sunlight and develop a rash. Therefore, limit exposure to the sun, wear protective clothing and use strong sunscreens on skin and lips.
- It may interfere with the management of diabetes.
- You will take this medicine for two months or longer.

Watch for:

- Red, swollen or painful joints – especially big toe, ankle and knee
- Fatigue, weakness, loss of appetite, nausea, vomiting
- Dark urine, yellow eyes or skin (jaundice)
- Increased sensitivity to sunlight – causing pink or reddish-brown rash or discolouration of the skin
- Other side-effects not listed may also occur in some people. If you notice any other symptoms or side-effects contact your doctor for advice.

Pyridoxine (Vitamin B6)

Pyridoxine is a B vitamin that is used to prevent or treat Vitamin B6 deficiency (low levels of Vitamin B6), which can sometimes be caused by Isoniazid. Vitamin B6 deficiency may cause inflammation of the nerve endings causing you to feel numbness and tingling in your fingers and toes.

What should I know about taking this medicine?

- You may not need to take this vitamin if you are able to get enough as part of a healthy diet.
- Do not take more than the prescribed amount of Vitamin B6.
- Check with your doctor before you take a multi-vitamin, as it may contain Pyridoxine.
- Notify your doctor if numbness or tingling feeling in your hands or feet persists or gets worse.

Watch for:

- Nausea, headaches, drowsiness
- Clumsiness or awkwardness
- Other side-effects not listed may also occur in some people. If you notice any other symptoms or side-effects contact your doctor for advice.

TB CONTACT INVESTIGATION

TB germs are most likely to be spread to people who spend a lot of time every day with someone who has contagious TB, such as:

- household or family members
- close friends
- co-workers
- classmates at school

These people are called “contacts” and may breathe in TB germs and get latent TB infection (LTBI). Not everyone with close contact will become infected.

The Public Health Nurse (PHN) will help you to identify who may have had close contact with you. You must tell the PHN the names of the people you spend time with and the places you go. It is helpful to make a list and give it to the PHN. The PHN will decide who on your list should be tested and will notify them to get a TB skin test. The PHN may speak with them or send them a letter. The PHN will not tell the “contacts” your name.

The PHN may have to speak to your school principal or employer to get the names of contacts at your school or work. To do this, the PHN might have to tell the school principal or employer your name. The school principal or employer is told that they cannot give your name to anyone else and that all information is confidential.

You may be worried or embarrassed about people learning you have TB. If your family, friends, classmates or co-workers find out that you have TB disease, you can tell them:

- Anyone can get TB. You did not do anything wrong to get this disease.
- You are taking your TB treatment so you can be cured.
- Your doctor and PHN will tell you when you are no longer contagious and can return to your social activities, work or school.
- A PHN will notify them if they need to be tested for TB.
- They can call the Winnipeg Regional Health Authority Population and Public Health TB program at 204-940-2274, with any TB questions.

What should contacts of *contagious TB* do?

PHN offers free assessments to contacts of contagious TB. Public Health will contact you if you require an assessment.

The closest contacts (e.g., family, household members) will be assessed as soon as possible.

- If the skin test is negative, it should be repeated eight weeks later. It can take several month for the body to show signs of exposure to the TB germ.
- Children four years old and under should also have a chest X-ray, even if their TB skin test is negative. They may also be ordered medicine for protection.

TB CONTACT INVESTIGATION...continued

- If the skin test is positive, the person has latent TB infection (LTBI) and should have a chest X-ray and medical check-up to ensure they do not have active TB disease. Other tests may also be necessary.
- Contacts with LTBI should discuss preventive medicine with a TB doctor. Medicine is available to prevent LTBI from becoming TB disease. The medicine is provided free to doctors to give to their patients.
- Contacts that have a record of a positive TB skin test in the past do not need another test. The PHN will help arrange for further assessment if they have symptoms of TB.

Contacts that spend less time with you and do not live in your house (e.g., people you work or go to school with) may not need any assessment or may only need one TB skin test after eight weeks. The PHN will notify them and recommend when their test should be done.

What should household contacts of TB that is *not contagious* do?

People with TB that is outside the lungs or throat cannot spread TB germs to other people. Public Health does not do a contact investigation and does not recommend any further follow-up for people who have spent time with them.

Important:

If you have LTBI or TB disease, get tested for HIV. If you have HIV, get tested for TB.

TUBERCULOSIS AND HIV/AIDS

What is HIV/AIDS?

HIV is an infection that weakens the immune system (your body's defences). The advanced stage of HIV is called Acquired Immunodeficiency Syndrome (AIDS).

HIV can be spread by:

- having sex without a condom (vaginal, oral or anal)
- sharing needles and/or syringes, or using non-sterile equipment for tattooing, electrolysis, piercing or acupuncture
- an untreated, infected mother to her unborn, newborn or breastfed baby

What is TB/HIV Co-Infection?

When a person is infected with both TB and HIV, it is called TB/HIV co-infection. The two diseases are a very serious combination because they cause more harm together than either disease does alone.

How Does HIV Infection Affect TB?

HIV weakens the immune system and makes it easier for a person to become infected with TB germs or to develop active TB disease. HIV infection is the most serious risk factor for causing latent TB infection (LTBI) to progress to active TB disease.

Why is it Important to Treat People who have TB/HIV Co-Infection?

People who have both TB and HIV infections are up to 50 times more likely to develop active TB disease in their lifetime, than people who don't have HIV. TB germs speed up the progress of AIDS. TB is the most common cause of death among people with HIV/AIDS, accounting for approximately one-third of the world's AIDS deaths each year. For some people with HIV infection, TB may be the first serious disease they develop.

Can I Receive Treatment for TB and HIV at the Same Time?

People with HIV and TB can be treated for both diseases at the same time. This requires close follow-up by a doctor who specializes in treating infectious diseases.

PREGNANCY, CONTRACEPTION AND BREASTFEEDING

You should prevent pregnancy while taking TB medicines. Tell your doctor if you are pregnant or breastfeeding, or if you are trying to get pregnant.

Some TB medicine causes birth control pills to not work as well. You should use other methods of birth control to prevent pregnancy. For more information or to obtain birth control, talk to your doctor or nurse.

Women with active TB disease who are pregnant or breastfeeding should be followed by a doctor who is an expert in the treatment of TB. The doctor will recommend which TB antibiotics are safe for use during pregnancy and breastfeeding.

A newborn baby should be examined for TB if the mother had active TB disease while pregnant or shortly after giving birth. The small amount of TB medicine found in breast milk of mothers taking TB medicines will not prevent or treat TB in their breastfeeding infant.

BACILLE CALMETTE-GUERIN (BCG) VACCINATION

What is BCG?

BCG is the only TB vaccination currently available, but it does not provide permanent or absolute protection against TB. It is used in areas of the world where TB is common and the chance of being exposed to contagious TB is high. BCG helps reduce the severity of TB disease in infants and young children.

Who is given BCG?

In countries with high rates of TB, BCG is given to infants and children to help prevent serious forms of TB disease, such as TB meningitis or miliary TB, which can often lead to death. In some countries, BCG is given several times during childhood and early adult life, in an effort to give some protection against TB.

In Canada, BCG is rarely used because TB is not widespread and the chances are small that infants and young children will be exposed. The exception to this is infants in First Nation or Inuit communities with high rates of TB. Another reason BCG is not used in Canada is because it may cause a TB skin test to become positive. This makes it difficult to interpret TB skin test reactions as it can be unclear whether a positive skin test is due to TB infection or vaccination with BCG.

Does BCG Work?

BCG is effective in preventing serious forms of TB. Unfortunately, the protection BCG offers in infants and young children does not extend into adult life. Therefore, many people develop active TB even though they received BCG in earlier years.

Although BCG has been used widely for a long time, one-third of the world's population has TB infection and two million people die of the disease each year. The rates of TB in countries that use BCG have not changed. BCG alone is not enough to stop the spread of TB.

Could BCG Cause a Positive TB Skin Test?

BCG can cause a positive TB skin test. However, as time goes by, not everyone who had BCG will continue to have a positive skin test. If you have a positive TB skin test and are from a part of the world where TB is common, the positive skin test is more likely due to TB infection and not the BCG vaccine.

TRAVEL WHILE ON TREATMENT FOR TUBERCULOSIS

People with contagious TB are not permitted to travel anywhere while they are contagious.

We recommend you wait to travel until your TB treatment is completed. You may develop side-effects, take your medicine incorrectly or have trouble getting more TB medicines or medical care while travelling.

If you plan to leave Canada for vacation, business, permanent move or return to your home in another country, you must:

- Not be contagious
- Be improving on your tests, X-rays and symptoms
- Have the approval of your doctor and your Public Health Nurse (PHN)
- Give the PHN the address and phone number in the country you are travelling to, the date you will leave Canada and the date you will return to Canada
- Obtain a letter from the PHN and your doctor about your TB disease and treatment to give to a TB health care provider in the country you are travelling to when you need medical care and to obtain more TB medicine
- Obtain a supply of TB medicine from your doctor or PHN. **Usually only a one-month supply of TB medicine can be given to you for travel, but there are some exceptions – talk to your PHN.**

While you are away:

- Continue to take your TB medicine
- See a health care provider if you develop symptoms or side-effects, and to get more TB medicine or blood tests
- Return to Canada for your next appointment with your TB doctor or nurse (unless you left Canada permanently)

If your medicine runs out while you are away you will have to provide proof that you:

- Obtained more medicine and continued your treatment without interruption
- Took your TB medicines as instructed
- Are not contagious

NUTRITION AND TUBERCULOSIS

Good nutrition is important when you have TB. Make sure you eat a healthy diet while you are sick.

Eat Well To Get Better Faster

Although you don't feel well now, do not lose hope. Tuberculosis (TB) can be cured. Successful treatment involves these three important things:

- 1. Take your medicine** – Your doctor has prescribed the best drugs to treat your condition. Be sure to follow the instructions. Take your medicine every day. Even if you begin to feel better, continue to take your medicine until your doctor says that you can stop. The medicine helps kill the TB bacteria and prevents it from coming back.
- 2. Rest** – Get plenty of rest because this will help your body to recover.
- 3. Try to eat well** – Eating well is an important part of your TB treatment. It helps your body to recover faster. Poor appetite, nausea and fatigue can stop you from eating enough food or the right kinds of food. This makes it harder for your body to fight infection. Eating healthy helps you rebuild your muscle tissue and increase your strength.

Use Canada's Food Guide to make healthy food choices every day. A variety of foods from each food group is the best way to get all the nutrients you need to assist your recovery. Ask your Public Health Nurse for a copy of Canada's Food Guide. If you need extra assistance with your eating, ask to speak to a Registered Dietitian. Phone Dial-A-Dietitian at 204-778-8248 or 1-877-830-2892

But what if I do not feel hungry, I feel sick to my stomach or I'm just too tired?

If you don't feel hungry or are feeling tired:

- Go outside for a bit before eating. Fresh air helps build your appetite.
- Eat when you feel hungry. Smaller meals spaced throughout the day may make you less tired.
- Eat foods that taste, smell, look and feel good to you.
- Eat your favourite foods and those that bring happy memories.
- Avoid foods that are fried or greasy.
- Eat slowly; don't rush the meal. Listen to your favourite music while eating. Eat with other people.

If you are feeling sick:

- Eat small amounts of food slowly and often.
- Eat foods that are cold or are at room temperature.
- Avoid fatty, fried or spicy foods.
- Snack on toast, crackers, fruit, vegetables and clear liquids, such as apple juice, cranberry juice, broth or soup or clear gelatine desserts.
- Sit up for about a half-hour after eating.
- Wear comfortable loose fitting clothing.
- Keep a record of the foods you ate, what time of day it was, what you were doing and if you felt nauseous. Share this information with your health care provider. Your doctor may also prescribe medicine that helps control nausea.

NUTRITION AND TUBERCULOSIS...continued

What can I do to gain back some weight?

- Try the tips on the previous page for dealing with a loss of appetite.
- Eat energy rich foods, such as peanut butter, nuts, seeds, avocados, homogenized milk, milkshakes, puddings, ice cream or cream soups.
- Eat snacks regularly, especially before bedtime. Have snacks at least 2 hours before the next meal so you still have time to build an appetite.

How much should I drink?

You need to drink plenty of fluids to help your kidneys remove body waste from the disease and drugs, and to prevent your sputum (mucous) from becoming too thick. You'll know you are drinking enough fluids when your urine is light-coloured (for example, like lemonade). Try fruit or vegetable juices, milk, soup, as well as water, tea, herbal teas, or coffee. All liquids count. Drink throughout the day.

Can I drink alcohol?

It is best to avoid alcoholic drinks. The drugs you take can be hard on the liver and alcohol adds further stress to this important organ. Some alcoholic drinks like red wine can interact with the drugs you are taking.

Is there anything that I cannot eat?

Drugs to treat TB can interact with food causing headaches, sweating, light-headedness and nausea. Check with your pharmacist or nurse for possible foods you may need to avoid when taking specific medications.

What foods should I eat?

Eat a variety of foods from the food groups in Canada's Food Guide every day. You may need to eat more: protein, vitamin B6, vitamin C, iron and calcium.

The following table highlights foods rich in these nutrients:

You may need extra:	Examples of foods you can get this from:
Protein to build body tissues and blood.	All meat, poultry, fish, dried/canned legumes (peas, beans, lentils), eggs, milk, yogurt, cheese, and skim milk powder (add to soups and casseroles)
Vitamin B6 (Pyridoxine) to keep nerves healthy and to help the body use energy. You may be prescribed a Vitamin B6 supplement along with your medication.	All meat (especially liver), fish, poultry, nuts (especially hazelnuts, walnuts, peanuts), chick peas, soybeans, broccoli, brussel sprouts, cauliflower, peas, banana, cantaloupe, grapes, dried fruits (dates, raisins, figs), whole grain cereals and bread, wheat germ
Vitamin C to keep gums and lungs healthy, and to help heal wounds.	Kiwi, oranges, grapefruit, lemons, limes, cantaloupe, strawberries, broccoli, cabbage, cauliflower, kale, sweet peppers, tomatoes, potatoes
Iron to take oxygen from the lungs to the rest of your body.	Beef, veal, pork, ham, liver, fish, chicken (dark meat has more iron), dried/canned legumes (peas, beans, lentils), dried fruit (prunes, prune juice, dates, raisins, apricots), whole grain cereals, cream of wheat, enriched pasta and breads, dark green leafy vegetables, eggs, nuts and seeds Eat foods high in vitamin C along with iron rich foods to help your body use iron from food
Calcium to keep bones strong and help muscles work.	Milk and milk products, such as cottage cheese, yogurt, cheese, soybeans, fortified soy beverage, tofu (set in Calcium sulphate), broccoli, kale, sardines and salmon eaten with bones, baked beans (canned), almonds, orange juice with Calcium

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For information on Eating Well with Canada's Food Guide, visit healthcanada.gc.ca/foodguide.

WHERE CAN I GET MORE INFORMATION ABOUT TUBERCULOSIS?

For more information, call **WRHA Population and Public Health TB Services at 204-940-2274**.

WEBSITES:

- Winnipeg Regional Health Authority: <http://www.wrha.mb.ca/>
- Healthy Parenting Winnipeg: <https://healthyparentingwinnipeg.ca/>
- Region of Peel–Public Health: peel-stoptb.ca
- Public Health Agency of Canada (PHAC) – Tuberculosis: publichealth.gc.ca/tuberculosis
- Lung Association – Tuberculosis: lung.ca/tb/main.html
- Stop TB Canada: stoptb.ca
- Health Canada – Eating Well with Canada’s Food Guide (available in several languages): healthcanada.gc.ca/foodguide
- Centers for Disease Control (CDC) – Tuberculosis: cdc.gov/tb
- Curry International Tuberculosis Center: currytbcenter.ucsf.edu
- Mayo Clinic: mayoclinic.com
- New Jersey Medical School National Tuberculosis Center: umdnj.edu/ntbcweb
- World Health Organization (WHO) – Tuberculosis: who.int/gtb

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