

# PHARMA HEALTH CLUB

SAFE USE OF MEDICINES FOR BETTER HEALTH

1<sup>ST</sup> APRIL, 2015

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**REACH THE  
3 MILLION.**  
FIND. TREAT.. CURE TB.

**WORLD TB DAY**  
24 MARCH, 2015

World Tuberculosis Day, falling on 24th March each year, is designed to build public awareness about the global epidemic of tuberculosis (TB) and efforts to eliminate the disease. Tuberculosis is causing the deaths of nearly one-and-a-half million people each year, mostly in developing countries. It commemorates the day in 1882 when Dr Robert Koch discovered the cause of tuberculosis, the TB bacillus.[1]

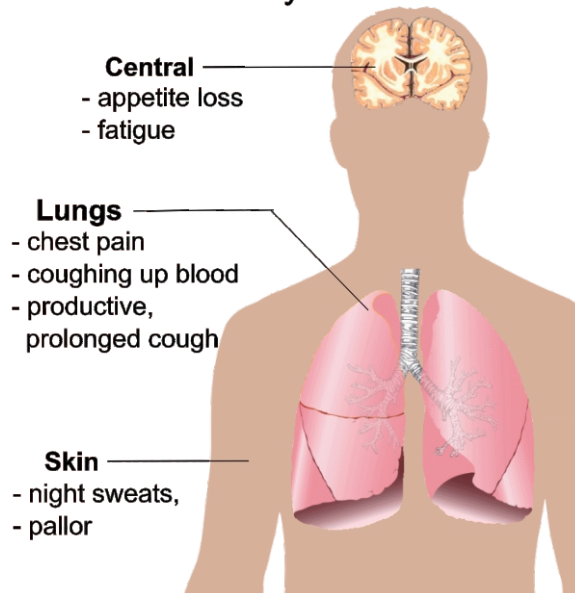
## What is Tuberculosis?

- Tuberculosis (TB) is a disease caused by bacteria called *Mycobacterium tuberculosis*. The bacteria usually attack the Lungs, but they can also damage other parts of the body. [2]
- TB spreads through the air when a person with TB of the lungs or throat coughs, sneezes, or talks. [2]
- Infection is most likely to occur if you are exposed to someone with TB on a day-to-day basis, such as by living or working in close quarters with someone who has the active disease. [4]

## What are the symptoms of Tuberculosis? [2]

A bad cough that lasts 3 weeks or longer |  
Weight loss | Loss of appetite | Coughing  
up blood | Weakness | Fever | Night  
sweats

### Main symptoms of Pulmonary tuberculosis



## HOW TO DIAGNOSE TUBERCULOSIS?

The Mantoux tuberculin skin test is performed by having 0.1ml of tuberculin Purified Protein Derivative (PPD) injected into the inner layer of the forearm. This will determine if the body's immune response has been activated by the presence of the bacillus. A positive test could reveal a palpable, swollen, hardened, or raised area that should be measure in millimeters. [7]

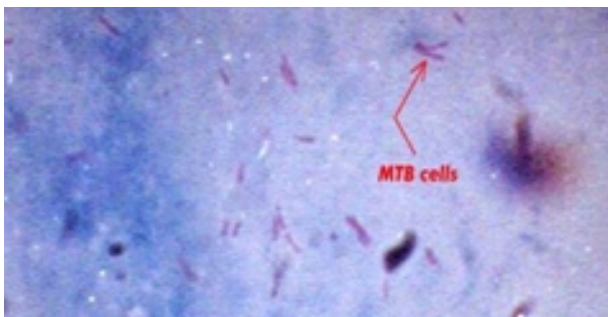


## AFB (ACID-FAST BACILLUS) SMEAR AND CULTURE:

AFB testing of Sputum culture may be used to detect several different types of acid-fast bacilli, but it is most commonly used to identify an active tuberculosis (TB) infection caused by the most medically important AFB, *Mycobacterium tuberculosis*. [9]

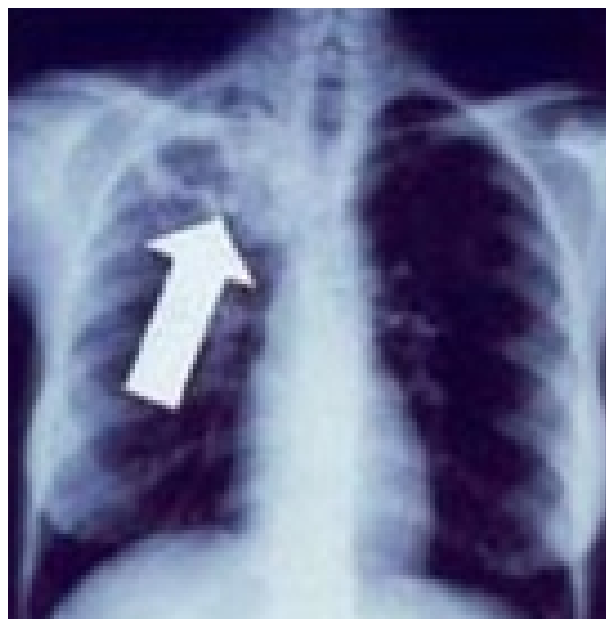
- **Chest X-Ray:** In active pulmonary TB, infiltrates or consolidations and/or cavities are often seen in the upper lungs with or without mediastinal or hilar lymphadenopathy or pleural effusions. [11]

- **TB blood tests:** TB blood tests (also called Interferon-Gamma Release Assays or IGRAs) measure how the immune system reacts to the bacteria that cause TB. Positive IGRA means that the person has been infected with TB bacteria. [12]



will take four medications (isoniazide, ethambutol, pyrazinamide and rifampicin) in the initial phase. Choice of treatment for active TB is based on isoniazid resistance. Ethambutol is not necessary in the initial phase if testing shows isoniazid and rifampin susceptibility. The continuation phase includes isoniazid and rifampin given daily, twice weekly, or 3 times weekly for a minimum of 4 months. [13]

Patients receiving the 9-month regimen for active TB follow a three-drug regimen during the initial phase. The continuation phase includes isoniazid and rifampin given daily or twice weekly. Alternative regimens include the following: rifampin, pyrazinamide, and ethambutol for 6 months; rifampin and ethambutol for 12 months with pyrazinamide for the first 2 months; isoniazid, ethambutol, and a fluoroquinolone for 12 to 18 months with pyrazinamide for the first 2 months. [13]



Medications Used in Treatment of Tuberculosis

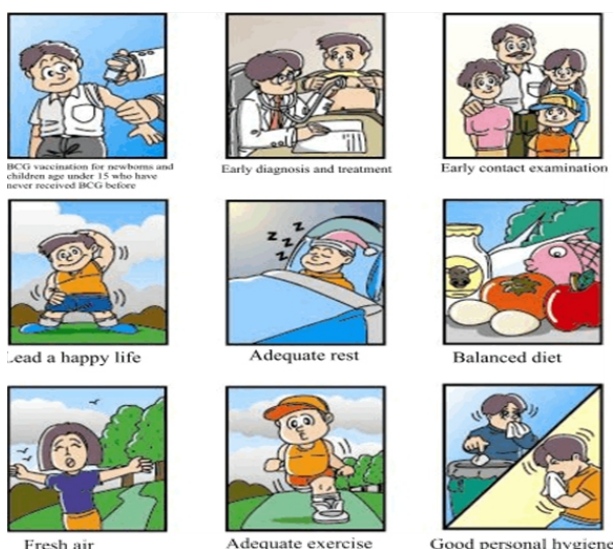
Drug	Maximum Adult dose		Adverse action
	Daily	Twice weekly	
Isoniazide	300 mg	900 mg	Hepatitis, Hepatic enzyme elevation, Peripheral neuritis, Rashes
Rifampicin	600 mg	600 mg	Hepatitis, Rashes, Thrombocytopenia, Red-orange tears – sweat – saliva
Pyrazinamide	2 gm	4 gm	GI upset, Hyperuricemia, Rashes, Thrombocytopenia, Arthralgias
Ethambutol	1.6 gm	4 gm	Optic neuritis, Peripheral neuritis, cutaneous reactions
Levofloxacin (Fluoroquinolone)	500-1000 mg	NA	Abdominal pain, nausea, diarrhoea, tendonitis

## HOW TO TREAT TUBERCULOSIS?

Treatment of active TB lasts for either 6 or 9 months and requires an initial 2-month phase followed by a continuation phase of either 4 or 7 months. Patients receiving the 6-month regimen

## DOT

- Directly Observed Therapy (DOTs) is the name given to the tuberculosis control strategy recommended by the WHO. According to WHO, "The most cost-effective way to stop the spread of TB in communities with a high incidence is by curing it. The best curative method for TB is known as DOTS." [15]
- DOT is the most effective strategy for making sure patients take their medicines. DOT means that a health care worker or other designated individual watches the patient swallow every dose of the prescribed drugs. [16]



## TB & AYURVED[19]

Tuberculosis is known as Rajayakshma in Ayurveda. Ayurved takes care of TB in two steps. First, the digestive system of the patient is made healthy. Second, herbal drugs and formulations are used to cure TB.

## BOOSTING DIGESTION

CHYAVANAPRASH: Two teaspoonful with a cup of warm milk twice daily on empty stomach.  
DRAKSHASAV: 30 ml of Drakshasava mixed with an equal quantity of water should be given to the patient.

## HERBAL DRUGS & FORMULATIONS

- PIPPALI: One teaspoonful of Pipali should be mixed with an equal quantity of honey and should be given to the patient thrice daily.
- LASUNA: The medicated concoction mixed with milk should be given to the patient twice every day.

- VASA (ARDUSI): The patient is given juice of the Vasa leaves. This controls the burning sensation in soles and palms, and also checks cough. The juice should be mixed with a teaspoonful of honey. 30 ml of this juice is given to the patient four times daily.

However, since gold and pearls are present in some formulations, it is advisable to purchase formulations from trusted sources only

## DIET AND OTHER REGIMEN

- Milk, pineapple, sitafal, orange, dried grapes, amla, phudina, dudhi, elaichi, hing, jaaifal are useful.
- Curd & jaamfal should be avoided. Hard physical or mental exercise should be avoided.
- Your physician is your best guide in a disease as severe as TB.

For dry cough accompanied by fever at night and weakness	<ul style="list-style-type: none"> <li>Suvarna Malati Rasa 250 mg</li> <li>Praval Pishti 500 mg</li> <li>Amritasava 250 mg</li> </ul>	All the three things must be taken with amla juice thrice daily.
In case of high temperature	<ul style="list-style-type: none"> <li>Muktapanchamrita 120 mg</li> <li>Pachnana Rasa 120 mg</li> <li>Amritasava 240 mg</li> </ul>	All the things must be taken with honey in morning and evening.
	<ul style="list-style-type: none"> <li>Chandramrita 1 gm</li> <li>Sitopaladi 12 gm</li> </ul>	These should be mixed with honey and used as a linctus.
For blood filled phlegm	<ul style="list-style-type: none"> <li>Vasantamalati 120 mg</li> <li>Raktapitta Kula-Kandana Rasa 120 mg</li> <li>Shatamulyadi Loha 240 mg</li> <li>Lakshadi Churna 1 gm</li> <li>Sitopaladi 1 gm</li> </ul>	All these should be taken with honey thrice daily.
	<ul style="list-style-type: none"> <li>Swarnamakshik Bhasma 120 mg</li> <li>Praval Pishti 240 mg</li> <li>Vasavaleha 10 gm</li> </ul>	All the things should be taken morning and evening with goat's milk.

# REFERENCES

1. Stop TB Partnership, "World TB Day"  
Available on:  
[http://www.stoptb.org/events/world\\_tb\\_day/](http://www.stoptb.org/events/world_tb_day/)  
(Accessed on: 07/03/2015)
2. Medline Plus: "Tuberculosis", Available on:  
<http://www.nlm.nih.gov/medlineplus/tuberculosis.html> (Accessed on: 07/03/2015)
3. Image of Tuberculosis - Available on:  
<http://thumbs.dreamstime.com/z/tuberculosis-28061915.jpg> (Accessed on: 07/03/2015)
4. WebMD - Understanding Tuberculosis -- the Basics - What is Tuberculosis? Available on:  
<http://www.webmd.com/a-to-z-guides/understanding-tuberculosis-basics>  
(Accessed on: 07/03/2015)
5. Transmission of Tuberculosis image - Available on:  
<http://www.cdc.gov/tb/topic/basics/images/sneezing.png> (Accessed on: 07/03/2015)
6. Symptoms of Tuberculosis - Image - Available on:  
<http://www.healthaidindia.com/images/signs-of-tuberculosis.png> (Accessed on: 07/03/2015)
7. Centers for Disease Control and Prevention. Tuberculin Skin Testing. Atlanta, GA.  
<http://www.cdc.gov/tb/publications/factsheets/testing/skintesting.htm> (Accessed on: 07/03/2015)
8. Mantoux Test - Image - Available on:  
[http://en.wikipedia.org/wiki/Tuberculosis#media/File:Mantoux\\_tuberculin\\_skin\\_test.jpg](http://en.wikipedia.org/wiki/Tuberculosis#media/File:Mantoux_tuberculin_skin_test.jpg)  
(Accessed on: 07/03/2015)
9. Lab Tests Online - AFB Testing - Available on:  
<http://labtestsonline.org/understanding/analyses/afb-culture/tab/test> (Accessed on: 07/03/2015)
10. AFB Test Positive - Image - Available on:  
[http://www.duhscme.com/TB/images/module3\\_clip\\_image004.jpg](http://www.duhscme.com/TB/images/module3_clip_image004.jpg) (Accessed on: 07/03/2015)
11. Tuberculosis Diagnosis - Chest X-Ray - Available on:  
[http://en.wikipedia.org/wiki/Tuberculosis\\_diagnosis#Chest\\_X-ray\\_and\\_CT](http://en.wikipedia.org/wiki/Tuberculosis_diagnosis#Chest_X-ray_and_CT) (Accessed on: 07/03/2015)
12. Centres for Disease Control & Prevention: Testing & Diagnosis - TB Blood Tests. Available on:  
<http://www.cdc.gov/tb/topic/testing/default.htm> (Accessed on: 07/03/2015)
13. Rachel Burke & Edward M, "Tuberculosis: Insidious But Treatable", US Pharmacists 2009; 34 (7): HS2-HS8 - Available on:  
<http://www.uspharmacist.com/content/c/14112/>. (Accessed on: 07/03/2015)
14. Multi-Drug Therapy for TB - WebMD. Available on: <http://www.webmd.com/a-to-zguides/multiple-drug-therapy-for-tuberculosis-tb> (Accessed on: 07/03/2015)
15. "Tuberculosis" WHO factsheet (revised). No. 104. March 1996.
16. Centers for Disease Control and Prevention: Self-Study Modules on Tuberculosis - Directly Observed Therapy (DOT). Available on:  
<http://www.cdc.gov/tb/education/ssmodules/module9/ss9reading2.htm> (Accessed on: 07/03/2015)
17. Lawn SD & Zumla AI, "Tuberculosis". Lancet 378 (9785): 57-72.
18. Tuberculosis & Chest services - The Dept. of Health - The Government of Hong Kong Special Administrative Region: "How can TB be prevented?" Available on:  
[http://www.info.gov.hk/tb\\_chest/contents/c1212.htm](http://www.info.gov.hk/tb_chest/contents/c1212.htm) (Accessed on: 07/03/2015)
19. <http://home-cure.net/ayurvedic-cure-tuberculosis/>