

MYCOBACTERIUM TUBERCULOSIS FACT SHEET

Definition:

Mycobacterium tuberculosis is part of the *Mycobacterium complex* group that includes *M. tuberculosis*, *M. africanum* and *M. cannetti*. Other mycobacteria occasionally produce disease clinically indistinguishable from tuberculosis.

What are the signs and symptoms of tuberculosis?

A person with active TB may experience loss of appetite, weight loss, fatigue, fever, night sweats early or late in the disease, whereas localized symptoms of chest pain, shortness of breath, cough and hemoptysis become more prominent in advanced disease.

Most people newly infected with TB develop a positive reaction to the TB skin test within 2-10 weeks. About 10% of those exposed will develop active TB in their lifetime.

How is *Mycobacterium tuberculosis* diagnosed?

Mycobacterium tuberculosis is diagnosed by tuberculin skin test, chest x-ray and sputum culture (definitive) or a positive pathology specimen. The classification of TB for treatment purposes is based mainly on the presence or absence of tubercle bacilli in the sputum. A smear positive for acid-fast bacilli (AFB) is indicative of high infectiousness.

How is *Mycobacterium tuberculosis* spread?

Infectious droplets that are produced when an infected person has expiratory efforts such as coughing, singing, sneezing and laughing, spread tuberculosis. Procedures such as bronchoscopy, nebulizer therapy, BIPAP or CPAP can produce large amounts of infectious particles as aerosols. Autopsy procedures can generate infectious particles as well.

Tuberculosis can be found in other body parts and is usually not of great risk unless there is exposure to body fluid (e.g., draining wound or operative procedure) of the involved body part.

What factors influence transmission of TB?

Transmission of TB depends on: (1) the infectiousness of the person (which is based on clinical and laboratory findings such as direct smear positivity and symptoms); (2) the ventilation in the exposure area; and (3) the duration of the exposure.

Some people may get TB disease more easily because they have a weakened immune system. Examples of immunocompromised people include those with HIV/AIDS, those on immunosuppressive therapy (e.g., steroids, chemotherapy), as well as people post-transplantation.

Infection Control:

Airborne isolation precautions should be followed whenever there is a suspicion of TB.

Infection Control will “flag” the patient as potentially infectious on the patient information system.

Airborne isolation is required and consists of a negative pressure room and the use of N95 respirators upon room entry.

Prior to a firm diagnosis it is sufficient to isolate in a single room with the door closed. However if the diagnosis is confirmed, a negative pressure room is required.

If a person is considered to be infectious (e.g., direct smear positive and/or productive cough) arrangements should then be made for transfer to a facility with the appropriate isolation requirements if not available on site. Always consult Infection Control in any case.

If the diagnosis is in progress and TB cultures are ordered, then collect 3 sputums, a minimum of 1 hour apart. All may be done in the same day. In some cases such as those acutely ill, a STAT sputum may be sent. All specimens should have a direct smear for the presence of acid fast bacilli (TB).

Infection Control must be consulted prior to discontinuing any isolation.

Information Sources:

American Public Health Association. Tuberculosis. In: Heymann DL, ed. *Control of Communicable Diseases Manual*, 18th ed. Washington, DC: American Public Health Association; 2004: 560-572.

American Academy of Pediatrics. Summaries of Infectious Diseases. In: Pickering LK, ed. *Red Book: 2003 Report of the Committee on Infectious Diseases* 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003: 642-660.

British Columbia Ministry of Health, BC Health Guide.

<http://www.bchealthguide.org/kbase/topic/major/hw207301/descrip.htm>