WHAT IS A TB SKIN TEST?

Tuberculosis (TB) is an infectious disease caused by the bacterium Mycobacterium tuberculosis, which primarily affects the lungs. Someone with active pulmonary TB can spread germs by coughing, sneezing, laughing or singing; however, repeated and/or prolonged exposure to someone with TB disease is generally necessary before a person will become infected. TB infection does not necessarily mean active disease is present and is most commonly diagnosed through the TB skin test.

Two types of skin tests are currently available in the U.S; the recommended Mantoux skin test, which uses a needle to place a standard dose of tuberculin just under the surface of the skin and the multi puncture or “tine” test uses multiple tines (pins) dipped in tuberculin. This test is not considered as accurate as the Mantoux test because the quantity of the tuberculin administered cannot be precisely controlled. The Mantoux test should be used for screening and diagnosis.¹

In countries other than the U.S., many people are vaccinated against tuberculosis using the BCG (bacillus Calmette Guerin) vaccine. BCG can cause a positive skin test, especially if it has been recently administered. There is no reliable method of distinguishing tuberculin reactions caused by vaccination with BCG from those caused by natural mycobacterial infections. The Center for Disease Control (CDC) and the American Thoracic Society (ATS) recommend, however, that large reactions to a TB skin test in BCG vaccinated persons be considered as indicating TB infection.²

TESTING

The TB skin test is usually performed by injecting a small amount of tuberculin under the superficial layers of the skin. The test is then read by a trained individual 48 to 72 hours later. A positive skin test results in a raised bump (induration) at the point of administration. The size of the induration determines whether the skin test is considered significant. The American Thoracic Society (ATS) and the Centers for Disease Control and Prevention (CDC) recommend different sizes of induration, called cut points, to be used for different populations, depending on whether the individual is at high risk for tuberculosis.³

A positive (now called “significant”) reaction indicates infection with TB. It is important to understand that there is a difference between being infected with TB and having active TB disease. Someone who is infected with TB has the TB germs, or bacteria, in their body. The body’s defenses are protecting them from the germs, and they are not sick. This is referred to as latent TB. If someone with TB disease is sick and may be able to spread the disease to other people. A person with a significant skin test needs to see a doctor to determine what further tests and treatment may be necessary. Chest X-rays, sputum tests and other tests are used to determine whether the positive reaction is associated with active TB disease.

A false positive result, especially after repeated tests, can also occur from exposure to “atypical” mycobacteria, which cause different patterns of infection and disease. These non-tuberculous forms of mycobacteria are most often found in patients who are HIV positive, although they infrequently cause disease in non-HIV infected individuals.

A person recently infected with TB may not react to the TB skin test. This is also true of elderly, debilitated and immunocompromised (e.g., AIDS) patients. In the case of patients who fit into these categories and who are suspected to be infected with tuberculosis, other tests including a chest x ray or a skin test at a later date may be used to determine the presence or absence of TB infection and disease.

Scientists are researching numerous diagnostic tests to replace the time-consuming skin test and sputum analysis used now. One study found that a new blood test known as QuantiFERON-TB was comparable to the tuberculin skin test in its ability to detect latent TB infection, and showed several potential advantages over the traditional skin test including a smaller chance of being affected by BCG vaccination, and reduced variability and susceptibility associated with administering and reading the skin test.⁴

WHO SHOULD BE SCREENED WITH THE TUBERCULIN SKIN TEST?

Individuals in high risk populations should be tested regularly if they have not previously had a positive skin test. These groups include:

- persons with signs, symptoms, and/or laboratory abnormalities suggestive of clinically active TB
- people who interact with persons with active TB disease
- poor and medically under-served people
- homeless people
- those who come from countries with high TB incidence rates
- nursing home residents
- alcoholics and intravenous drug users
- people with HIV or AIDS, or who are otherwise immune-suppressed
- people in jail or prison
- the elderly
- health care workers and others such as prison guards who work with high-risk populations.

Individuals with TB symptoms should receive medical attention immediately. TB symptoms include:

- Prolonged cough
- Night sweats
- Unexplained weight loss
- Loss of appetite
- Weakness
- Fever/chills
- Occasionally coughing up blood

**TREATMENT**

A person who has become infected with TB and is not yet sick may be advised to have preventive therapy. Preventive therapy aims to kill germs that are not causing damage to the body but could eventually become active.

A major part of the public health problem is that TB differs from most other bacterial infections that are generally cured with ten days to two weeks of antibiotic treatment. Active TB requires months of therapy. The patient usually gets a combination of several drugs (most frequently INH plus two to three others including rifampin, pyrazinamide and ethambutol), usually for nine months. Rifater, a product combining isoniazid, rifampin, and pyrazinamide in a single tablet, was approved by the FDA in 1994.

In June 1998, the U.S. Food and Drug Administration approved the first new drug for pulmonary tuberculosis in 25 years. The drug, rifapentine (Priftin), is approved for use with other drugs to fight TB. One potential advantage of rifapentine is that can be taken less often in the final four months of treatment once a week compared with twice a week for the standard regimen.

If people with TB disease do not complete therapy for at least 6 months, they can develop and spread the strains of TB that are resistant to available drugs. Multidrug-resistant (MDR)-TB is extremely difficult to treat-one case can cost up to $1 million to treat.

For more information on tuberculosis, please review the Tuberculosis Morbidity and Mortality Trend Report and Lung Disease Data in the Data and Statistics section of our website or call the American Lung Association at 1-800-LUNG-USA (1-800-586-4872).

**Footnotes:**

I. Definition of active disease: Bacteria is active. Person has symptoms of TB and is infectious.
II. Definition of latent disease: Inactive disease. Person does not have symptoms.

**Sources:**

2. Ibid.
3. Ibid.
7. Ibid.
8. Ibid.
9. Ibid.
Hepatitis-B Vaccination

Fact Sheet

The following policy has been adopted by the MSU Athletic Training Education Program regarding Hepatitis-B vaccination.

All athletic training students and faculty are required to present documentation of a completed series of HBV immunizations or a signed waiver prior to participation in any athletic training clinical experiences.

Hepatitis B

Hepatitis B virus is one of the multiple causes of hepatitis. Although most people will recover completely from an acute infection, as many as 50% can become chronic carriers and 1 to 2% will die from full blown hepatitis. Chronic carriers, who may have no symptoms and others that show symptoms (such as chronic persistent hepatitis, chronic active hepatitis, cirrhosis or liver failure) could possibly transmit the virus to others. Hepatitis B is also strongly linked to causing Hepatoma, a form of liver cancer.

Hepatitis can be transmitted by contact with bodily fluids such as:

- Blood
- Semen and vaginal secretions
- Tears
- Saliva
- Urine
- Breast milk

All medical and allied medical/health care professionals are at high risk of acquiring Hepatitis B because of frequent exposure to potentially contaminated blood or bodily fluids.

With those facts in mind, the vaccine is strongly recommended to prevent illness from Hepatitis B

Hepatitis B Vaccine

The Hepatitis B vaccine is composed of noninfectious recombinant DNA Hepatitis B virus. Clinical studies have found that after 3 doses, 96% of healthy adults have become seroprotected. Individuals with immune system abnormalities have less response to the vaccine but over 67% of them develop antibodies. If you have immune deficiency problems please consult your physician before receiving the vaccine.

Dosing Schedule

Three (3) doses of the Hepatitis B vaccine are needed to provide protection and should be administered at the students earliest opportunity followed by a second dose one (1) month later and finally the third dose completed in the sixth (6th) month.

Adverse Reaction

Most individuals tolerate the vaccine with little or no side affects. However, you must understand that some individuals will experience soreness, induration, redness and swelling at the site of the injection. In addition, some may experience fatigue, fever, headache, and dizziness. With any vaccine, expanded use by health care professionals will reveal other rare adverse reactions not yet discovered in clinical studies.

Contraindications

Individuals with hypersensitivity to yeast and other components of the vaccine should consider NOT taking the vaccine. If you are currently experiencing any serious active infection, you should delay the use of Hepatitis B vaccine until the infection has resolved. The Hepatitis B vaccine should NOT be administered pregnant or lactating women unless authorized by their physician.

Warnings

Anyone who experiences hypersensitivity reaction AFTER a Hepatitis B injection should not receive any further injections. The Hepatitis B vaccine may not prevent a hepatitis infection in a person who may have an unrecognized or early Hepatitis B infection at the time of the vaccine injection. In addition, a small percent of healthy individuals do not respond to the vaccine and do not develop immunity.
MSU ATEP TB Skin Test Verification

Please answer Yes or No to each statement:

____ Yes ____No  I have health or medical conditions that suppress my immune system.
____ Yes ____No  I have been exposed to someone with active tuberculosis disease.
____ Yes ____No  I currently hold a visa from U.S. Immigration Services.
____ Yes ____No  I am a U.S. citizen who previously resided outside of the U.S.

If you answered “Yes” to any of these statements, you are required to get the TB skin test. If you answered “No” to all of these statements, you are NOT required to receive the TB skin test.

Screening guidelines (if you answered “Yes” to any of the above statements):
• TB testing should be done within six months prior to entrance or immediately upon entrance to the MSU ATEP.
• The Mantoux test is the only acceptable tuberculin skin test. Only U.S. test results will be accepted.
• A history of BCG vaccination does not exempt you from the testing requirements.
• Persons with a previously positive test should submit medical records showing chest X-ray results as well as treatment and outcome.

o I am required by the guidelines above to be tested for TB. I have enclosed my TB skin test results
o I have had a positive TB skin test and I am including documentation of the location of my annual chest X-Ray
o Although I understand the risk, I am not required to take a TB skin test according to the above guidelines

HEPATITIS B VERIFICATION

During my Athletic Training Clinical Experiences at McNeese State University (and related off-campus clinical sites), I acknowledge and understand that I may be exposed to blood, blood-borne pathogens and other potentially infectious materials. I understand that this exposure may put me at risk for acquiring the Hepatitis B virus (HBV) infection. I understand that there is a Hepatitis B vaccination series available at the health department or from my family physician. I understand and acknowledge that it is my responsibility to obtain and pay for the vaccination series if I chose to do so. I further acknowledge by my signature and by checking the options below that I have read and understand the Hepatitis B fact sheet.

SELECT ONE

o I have read the Hepatitis B fact sheet and in deciding not to obtain the Hepatitis B vaccination series, I understand that I may be a risk for acquiring the Hepatitis B virus (HBV) infection, which is a serious disease. I understand the above information and decline to obtain the Hepatitis B series.

o I have read the Hepatitis B fact sheet and I have received my initial or second Hepatitis B vaccination and I am in the process of completing my vaccination series. To this form, I have attached a letter from my family physician to verify my partial compliance including a date of anticipated completion. (At the time of completion, a copy of this form and a copy of the verification of the entire Hepatitis B vaccination will be completed.)

o I have read the Hepatitis B fact sheet and I have received the entire Hepatitis B vaccination series prior to the beginning of my Athletic Training Clinical Experiences at MSU (and related off-campus clinical sites) and have attached a copy of this verification to this sheet. This form and a copy of the verification have been given to my Athletic Training Clinical Instructor.

____________________________________  ____/_____/__________
ATEP Student  Date  rev. 5/1/9