Protect Yourself Against Tuberculosis

What is Tuberculosis and why has it become so important?

Tuberculosis is a potentially severe contagious disease that primarily affects the lungs, but can damage many parts of the body. It is usually transmitted by droplets in the air we breathe. Tuberculosis bacteria may be spread by patients with active disease whenever they cough, speak or sneeze.

If you inhale tuberculosis bacteria you may become infected with the bacteria but not get sick. This infection can be detected by a positive tuberculosis skin test. The infection may remain dormant for an indefinite period of time, often not causing disease. However, infection may lead to active disease. Active disease can be contagious; symptoms may include cough, fever, chills and weight loss.

It is recommended that some individuals with TB infection be treated with medicine(s) to prevent active TB disease. Although the treatments usually are very effective and safe, there may be side effects in some patients. The goal is to prevent both TB infection and active disease.

For most of the last century TB decreased rapidly in the United States, but from 1985 to 1992 the number of cases increased. Outbreaks of tuberculosis have occurred in hospitals and some healthcare workers acquired the disease, a few of whom have died. Some TB bacteria have become resistant to the usual antibiotics (so-called "Multidrug-Resistant" or MDR-TB). Better preventive actions should reduce the spread of TB in hospitals and other healthcare settings.

What kind of preventive measures are there?

The first step in preventing the spread of TB is to quickly identify, isolate and properly treat contagious patients. Nearly all TB patients under proper treatment will become "non-contagious", that is, he or she will not be able to transmit the disease to others. Other steps to reduce the spread of the disease include ventilation to remove the bacteria from the air you breathe, and ultraviolet lights that kill the bacteria. When you are in close contact with a contagious TB patient, none of these steps will completely protect you, and respirators are needed.

What is a respirator and what type should I wear?

A respirator is a protective facepiece, hood or helmet that is designed to protect the wearer against a variety of harmful airborne agents. Wearing a respirator reduces your chances of becoming infected with TB. Each healthcare facility’s infection control officer will determine under what circumstances respirators must be worn and which employees are required to wear them. In addition, the Occupational Safety and Health Administration (OSHA) currently requires the use of respirators and is enforcing their use under the general duty clause while developing specific standards to prevent TB in healthcare workers.
In general, there are two types of respirators. One type is an air-purifying respirator that filters out or captures harmful agents from the surrounding air. The other type is an air-supplying respirator that provides a separate source of clean air for breathing.

Surgical masks are not respirators and do not do a good job of removing all TB bacteria. Some surgical masks fit so poorly that they provide very little protection from any airborne hazard. Only a NIOSH-certified respirator should be worn for TB protection. Only certified respirators will protect you against TB. Also OSHA requires the use of certified respirators when respiratory protection is needed. Certified respirators have a certification number (TC-84A-XXX) or (TC-21C-XXX) and a NIOSH or NIOSH/MSHA approval label on the filter, container, instruction sheet and sometimes on the respirator.

Air-purifying respirators remove small particles from the air you breathe. There are several types of particulate respirators (HEPA, N, P or R series) that are available for use against TB. Some are made without exhalation valves, making them particularly useful in certain healthcare settings. USE particulate respirators when entering TB isolation rooms or other areas of the healthcare facility that the facility has determined require respiratory protection. A face shield may provide additional protection against body fluids. DO NOT USE particulate respirators with an exhalation valve when working in a sterile field, such as an operating room. The exhalation valve allows droplets and particles exhaled by the healthcare worker to escape and potentially contaminate the surgical field. These respirators are low-cost, light weight and do not restrict mobility. These respirators may be available in as many as 3 sizes. Fit check this respirator following the manufacturer’s recommendations on the packaging every time you put it on to ensure a proper fit. This respirator can be used as long as it is not physically damaged or soiled and passes the fit check.

Powered Air-Purifying Respirators ((PAPR) use a blower to pass contaminated air through a HEPA filter, which removes the contaminant and supplies purified air to the facepiece, hood or helmet. PAPR's should be used when disposable and reusable half-masks do not provide adequate protection. A face shield may be used in conjunction with a half-mask PAPR for protection against body fluids. Whenever high risk procedures such as bronchoscopy or autopsy are conducted, respiratory protection exceeding the CDC standard performance criteria may be needed. Since this type of respirator exhausts air contaminated by the user, it should not be worn during sterile procedures. Hoods, helmets and facepiece exhalation valves allow droplets and particles to escape, potentially spreading contagious particles to the surgical field by the healthcare worker. PAPR's utilizing half-mask and full facepieces usually are available in 3 sizes. Loose fitting PAPRs (hood, helmets. etc.) are in one size intended to fit all. Filters should be thrown away when they become physically damaged or soiled.

Always check with the facility's infection control officer if you have any questions about how to protect yourself from tuberculosis in any patient situation.