



**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations**

**EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT TUBERCULOSIS
(AND SOME THINGS YOU DIDN'T KNOW)**

WHAT IS TUBERCULOSIS (TB)? TB is a disease caused by the germ called *Mycobacterium tuberculosis* and can affect almost any organ or tissue in the body. It is spread by inhaling the germ, most commonly affects the lungs (but can affect other organs), and can cause serious health problems if not treated. NOAA is concerned about TB because it can be spread from one person to another, especially when they reside in close quarters such as a ship or airplane environment. This problem is addressed by testing for the presence of TB and by medications to treat it. OMAO has accepted the responsibility to try to avoid even one case of TB aboard a NOAA platform.

HOW DO YOU TEST FOR TB? Testing is performed to identify individuals who are at higher risk for TB exposure or infection and those at a higher risk for TB disease once infected. This is done in one of two ways.

The Tuberculosis Skin Test (TST, also called a PPD) is administered by injecting a tiny amount of purified protein derivative (PPD) under the skin on the forearm. The area the test was administered on your forearm will be viewed by a medical professional within 48-72 hours. The medical professional will **measure and record** any area of **induration** (elevation) in millimeters (not redness that is not elevated). Valid results are viewed and measured by a medical provider only and are not reported as "negative" or "positive" but are reported as a number of millimeters. An elevated reaction at the test site does not necessarily mean you have active TB disease, but it may mean that you have come in contact with the TB germ. It takes 2-10 weeks from the time you are exposed to the germ for the TST to become positive.

The QuantiFERON test (QFT) is a laboratory test that is done on a sample of your blood. These results are available within 24 hours. Results are interpreted as positive, negative, or indeterminate. This test has a lower rate of false positives than the TST does and is very specific in detecting exposure to the germ that causes TB in humans. The results of the QFT test are NOT affected by prior TB vaccination with BCG, and does not cause a "boosting effect" like the TST.

Neither the TST nor the QFT test can differentiate between active TB and latent TB infection. The QFT test can be used in all circumstances in which the TST is used, and can be used in place of the TST. **It is medically safe to give the TST or the QFT test to those who have received prior BCG (TB vaccine).** NOAA Health Services can provide the TST to eligible recipients, but does not provide the QFT. Your doctor can order the QFT test for you at a cost of around \$35.00 (cost may vary).

It is advisable to get your TST or your QFT at least 4 weeks BEFORE you plan to sail or fly with NOAA. This will allow time for any unexpected results to be addressed before the date you wish to embark.

WHEN IS A TB TEST READ AS POSITIVE? A TST is read as positive if the raised area on the skin where the test was applied is measured as:

- Greater than or equal to 5 mm and you have known HIV infection, have recently been exposed to active TB, have a chest x-ray suggestive of previous TB, or have other health problems that affect your immune system.
- Greater than or equal to 10 mm if you have been to another country where TB is common less than 5 years ago, you use illegal drugs that you inject, you live or work in a high risk setting, or you have other medical risk factors.

- Greater than or equal to 15 mm if you have no known risk factors for TB and are otherwise healthy.

A QFT test is read as positive, negative, or indeterminate. This test must be interpreted by a trained health care provider who has access to the actual laboratory values.

WHO HAS TO TAKE MEDICATION FOR TB? To help avoid even one case of TB aboard one of its ships or aircraft (confined close living spaces), NOAA's treatment policy for positive test results is more conservative than what is proposed for the general population. This helps to explain why NOAA Health Services may say you will need treatment for your positive test and your private medical provider may not agree. Remember, NOAA Health Services holds the final approval as to whether you are fit to sail or fly aboard a NOAA ship or aircraft and not your private medical provider.

If your TST or QFT test is read as positive, you will be asked to complete a TB risk questionnaire provided by NOAA Health Services. The results of the questionnaire will help determine what needs to happen to medically clear you to sail/fly with NOAA. In general, if you have a positive TST or QFT result with no risk factors identified by the questionnaire (with or without prior BCG vaccination) you may be cleared to sail/fly. If you have a positive TST or QFT test and DO have risk factors identified by the questionnaire you will be referred to your personal medical provider for a chest x-ray and will be required to take medication for TB before being cleared to sail/fly with NOAA. There are a few exceptions to this that exist, and each will be handled on an individual basis.

Taking medication for latent TB will reduce the risk that the TB infection will progress to the actual disease. You will be allowed to sail/fly on a NOAA ship or aircraft once you have begun the medications and you continue to take them as prescribed. Remember that you are not medically cleared to sail/fly with NOAA until you have received official notice from NOAA Health Services.

WHAT IF I ALREADY HAD A VACCINE FOR TB (CALLED BCG)? This vaccine is not widely used in the United States but is often given in other countries where TB is common. This vaccine, however, does not always protect people from getting TB. You may have a positive reaction to a TST even if you got the BCG vaccine. This reaction may be due to the vaccine itself or due to an actual TB infection or recent exposure. If you have had the BCG vaccine in the past and now have a positive TST, you may have been infected with the TB germ if you spend time with someone who has active TB disease, if you are from an area of the world where TB is very common (Latin America, Caribbean, Africa, Asia, Eastern Europe, Russia), or if you spend time in an area where TB is common (homeless shelters, migrant camps, drug treatment centers, jail or prison, health care clinics). This vaccine does not provide a lifelong immunity to TB, and you will still be required by NOAA get either a TST or a QFT every year. The BCG does not affect the results of the QFT test but can affect the TST results. **There is NO medical risk to give the yearly TST or QFT test to those who have received a BCG in the past.**

There is no reliable method to tell if a positive TST is caused by the BCG vaccine or by contact with the TB germ, though skin reactions of greater than or equal to 10 mm are not likely caused by the BCG vaccine. A positive reaction to the TST in a person who received the BCG vaccine more than 5 years ago usually indicates infection with the TB germ when the tested person is at increased risk for recent infection or has medical problems that increase the risk for TB. If the TST is positive, there is no need to have the QFT and vice versa.

WHAT IF I HAVE RECEIVED MEDICAL TREATMENT FOR TB IN THE PAST OR HAVE BEEN GRANTED A PERMANENT NOAA WAIVER FOR A POSITIVE TST (PPD) SKIN TEST? If you are one of these people, you will not be required by NOAA to have a TST or QFT now or in the future. Per NOAA policy, however, you will be required to have a chest x-ray every 5 years instead of the yearly TST skin test. A copy of the results of this x-ray or a letter from your medical provider with the date and results of this x-ray must be received by NOAA Health Services before embarking on a NOAA vessel or aircraft. You will not be allowed to embark without this information on record at NOAA Health Services. If you have received treatment in the past with medications for a positive TB test, you must submit a letter to NOAA Health Services from your personal medical provider stating the date of your treatment, what medications and dosages were used, and whether you completed the treatment. If the medication treatment was not completed, the letter from your medical provider must include the reason why. Once this letter is submitted to NOAA Health Services, it will be kept on file for future reference.

WHAT IS NOAA'S POLICY ON TESTING FOR TB? NOAA requires each year a TST or QFT for everyone who embarks on one of its ships or aircraft for an overnight or longer stay. The exceptions are for those who have been treated with medications for latent TB in the last 5-10 years (written documentation of treatment from your doctor must be provided to NOAA and is kept on file) and those previously deemed eligible to sail by NOAA (via a waiver) and who have a positive TB test. Those who had an anaphylactic reaction to the TST can be given the QFT. For those who otherwise refuse a TST or QFT, a chest x-ray and a medical exam for symptoms will be required as evidenced by a note from your personal medical provider showing you are free of TB. Before embarking on a NOAA vessel or aircraft, you must produce proof (i.e. medical records or a letter from the doctor who treated you) that you have received medication treatment if: (1) you have a positive TST of greater than or equal to 15 mm, (2) your skin reaction to the test has increased by 10 mm from the previous one, (3) if your TST is greater than 10mm and you have risk factors for TB (discussed above), (4) if your skin reaction was 20mm or greater and you have received the BCG vaccine in the last 5 years, or (5) if you have a positive QFT.

WHAT ARE NOAA'S PROCEDURES FOR THOSE WHO ARE DEEMED NOT MEDICALLY CLEARED FOR SEA OR AIRCRAFT DUTY DUE TO A POSITIVE TST OR POSITIVE QFT?

If you have a positive TST or positive QFT **and have NOT undergone prior medical treatment**, there are two options by which you can become medically cleared to sail/fly aboard NOAA vessels. These options are listed below. **In all cases, a chest x-ray must be obtained and these results submitted to NOAA Health Services personnel ONLY.**

Option One – Complete and submit a tuberculosis questionnaire (obtained from the NOAA Health Services Office and submitted back to them when complete).


- A. If it is determined, based on this questionnaire that you have no risk factor(s) for developing active TB, NOAA Health Services may deem you medically cleared to sail/fly.
- B. If it is determined that you DO have risk factors for developing active TB based on the questionnaire, you will be required to begin medication to protect you before NOAA Health Services will medically clear you to embark on a NOAA vessel or aircraft.

Risk factors (outlined in the questionnaire) include: a positive HIV test, taking any medication or having a medical problem that reduces you body's ability to fight infection, history of IV drug abuse, clinical symptoms or chest x-ray results consistent with prior or current TB infection, contact with a known positive case of TB, or travel to or being from a foreign country where TB is common. Other risk factors include a history of: being homeless, being in jail or prison, or working with these populations.

Option Two – If for some reason you do not/can not complete and submit the tuberculosis questionnaire to NOAA Health Services, you are advised to sign a medical release form giving the NOAA Health Services personnel permission to speak with and receive written documentation from your personal medical provider regarding the questions on the questionnaire.

- A. **If you refuse to sign this medical release, you will remain not medically cleared to sail/fly and may not embark on any NOAA ship or aircraft.**
- B. If the medical release form is signed, the questionnaire will be sent to your medical provider for completion and discussion with NOAA Health Services medical personnel.
 - 1. If the information requested on the questionnaire is not evident or not disclosed by your medical provider, you will not be medically cleared to embark on any NOAA ship or aircraft.
 - 2. After consultation with your medical provider and the exchange of necessary information, NOAA Health Services medical personnel will render a decision as to whether or not to recommend that you be medically cleared to sail or fly.
- C. **All information must be received in writing before a decision of medical clearance to sail/fly is rendered. All final medical clearance decisions rest with the Director, NMAO.**
- D. If it is determined that you have no risk factors based on this information for developing active TB, medical clearance to sail or fly may be granted.
- E. If it is determined that you DO have risk factors for developing active TB, you will be required to begin medication to protect you before medical clearance will be granted for you to embark on a NOAA vessel or aircraft.

In either option, a medical clearance to sail/fly will not be granted until all required information is gathered. The process involved with Option Two can be time consuming. If not properly planned for ahead of time, it may result in an individual not being allowed to sail or fly because requested information was not submitted in time. Because approximately 10% of individuals with a positive PPD skin test will develop active TB over the course of their life time and because TB is recognized as a contagious disease, the NOAA Office of Health Services has been directed by the Director, Office of Marine and Aviations Operations to not provide medical clearance for sailing/flying aboard a NOAA vessel or aircraft to anyone that poses a risk to others without previous medical treatment for TB.



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