

## Diagnostic Tests

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You may need to have some tests to help the health care team diagnose and treat your problems. Some of these tests are described here.

### **Chest X- ray**

A chest x-ray helps the team evaluate your lungs, heart and diaphragm. For example, emphysema shows large lungs with a low, flat diaphragm. X-rays also help to rule out or confirm other problems such as pneumonia, tuberculosis or lung cancer.

### **Computerized Tomographic scan (CT scan)**

A CT scan is a special type of x-ray. The CT scan allows the team to see a detailed picture of your lungs. This scan is done to better define areas of the lung that are not well seen on x-ray.

### **Oximetry**

Pulse oximetry measures how much oxygen you have in your blood. The amount of oxygen in your blood is measured by placing a soft pad on your finger. The result is given in a percentage. This test is done while you rest, on exertion and during sleep to see if you need to be taking extra oxygen.

### **Arterial Blood Gases**

A sample of blood is taken from an artery in your wrist to measure the oxygen and carbon dioxide levels in your blood. This is blood that comes directly from your heart and lungs. The blood sample is taken by the Respiratory Therapist or a Doctor and sent to the laboratory right away for analysis. The results help the team see how well your respiratory system is working.

### **Overnight Oximetry**

For some people with respiratory problems, breathing during sleep affects the oxygen and carbon dioxide levels in the blood. Overnight oximetry is a simple sleep study. A pulse oximeter pad is placed on your finger and records your oxygen levels while you sleep. This test may be done in the comfort of your own bedroom.

## **Sleep Study (Polysomnography)**

A sleep study is used to assess your breathing through the night. Sensors and leads are attached to your body to monitor your heart, lungs and brain, as well as the movement of some muscles. This test is performed in a Sleep Lab overnight. A technician monitors the equipment all night while you sleep.

## **Pulmonary Function Tests**

Pulmonary function tests provide information about your lungs. Your lung function is compared with measurements made in many people of similar height, weight, age, gender and race without any lung problems. These tests are described below.

### **Body Plethysmography (Body Box)**

This test measures how much air your lungs can hold as well as how much air is in your lungs when you breathe. This shows if your lungs are large or small, stiff or floppy or full of trapped air. It also shows if you have enough extra room in your lungs so that you could inhale more deeply when you exercise or cough. For this test you sit in a clear booth. You then breathe in and out of a mouthpiece.

### **Diffusing Capacity**

This test measures the thickness of the membrane between the alveoli and blood vessels in your lungs. If this membrane is too thick, the oxygen will not be able to pass as easily into your blood. For this test you breathe in a special mixture of gas and hold your breath. You then blow into a machine.

### **Spirometry**

This test measures the flow of air through your lungs. If the airways are narrow, the air flows more slowly, making it harder to breathe. You take a deep breath in and blow out as hard and fast as you can.

### **Maximul Inspiratory/ Expiratory Pressure (MIPS and MEPS)**

This test measures the strength of your breathing muscles, both inspiratory and expiratory. You take a deep breath in against some resistance. You then blow out as hard as you can against resistance.