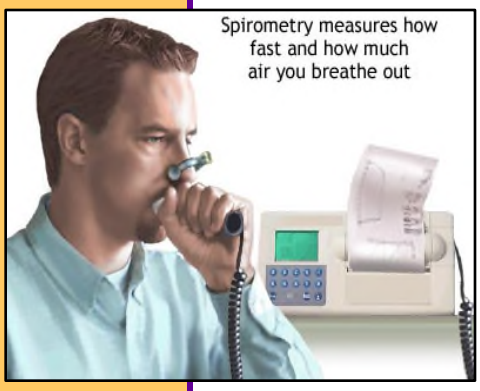
What Spirometry Tells You



SPIROMETRY measures how fast you can breathe out. It also measures how much total air you breathe out. In this test, you breathe into a mouth-piece on a device called a spirometer. At the same time, a machine makes a tracing of the rate at which the air leaves the lungs. Diseases of airflow obstruction and of lung stiffening give characteristic tracings with spirometry.

The test measures:

- *The amount of air that can be expelled following a deep breath*, called forced vital capacity (FVC)
- *The amount of air that can be forcibly exhaled in one second*, called forced expiratory volume in one second (FEV1)

These measurements are the most useful numbers that spirometry can give a doctor. The doctor can use the ratio of FEV1 to FVC to evaluate patients for airflow obstruction. It is normally 75 85%, depending on the patient's age. The ratio is reduced in obstructive diseases, while it is preserved or even increased in restrictive disorders (reduced lung volume).

A lower than normal FEV1 is a sign of a lung disease. A falling FEV1 is a sign that a person's lung disease is getting worse.

The "normal" values for FVC and FEV1 for a patient depend on their age, gender, height, and race. Normal values are higher for younger than for older people, higher for tall than for short individuals, higher for men than for women, and higher for whites than African Americans or Asians.

Therefore, the numbers are presented as percentages of the average expected in someone of the same age, height, sex, and race whose airways are not blocked. This is called percent predicted. Any number smaller than 85% of predicted is considered abnormal.

Abnormal spirometry numbers at any age mean that you are at risk for early lung disease and even potentially fatal lung cancer, heart disease, or stroke.