



BREATHE EASY

Test Your Lungs Do You "Know Your Numbers"?

"Know Your Numbers" has become a popular phrase in medicine. Everyone is encouraged to know their blood pressure, and most people do. Controlling high blood pressure decreases the risk of stroke, as well as cardiac and kidney disease. Cardiologists encourage us to know our cholesterol numbers as higher cholesterol values place us at higher risk for developing coronary artery disease and heart attack.

Now, pulmonary physicians are encouraging patients who are at risk for developing lung disease to know their lung function numbers. Lung function is measured by a simple test called "Spirometry." Spirometry testing is performed by taking in a deep breath and blowing out as hard as you can for as long as you can into a small tube which is attached to the spirometer (the device which measures your lung function). The spirometer measures how much air you can exhale from your lungs and how fast that air flows out of your lungs. From this simple and painless test, a very sensitive and accurate picture of your lung function is presented to your physician.



Spirometry testing will reveal changes in lung function when symptoms are still very mild or even before they appear. Because lung disease has such a gradual development, patients often fail to acknowledge the early symptoms of shortness of breath on exertion or morning cough. They often dismiss it as a part of, "just getting older." If patients wait until significant symptoms appear, their disease may be moderately to severely advanced.

Spirometry Definitions

FVC - A measurement which is representative of the "size" of the patient's lungs. A reduction may indicate lung volume which is smaller than normal.

FEV1 and FEV1/FVC - Measurement of how fast the air is able to be forced out of the chest. A reduction may indicate an obstructive in the airways (i.e. difficulty getting air out of the chest).

Patients at risk for developing lung disease (see next page) should have spirometry testing performed and repeated every few years. By performing earlier screening, patients at increased risk (that is those with reduced numbers) can be identified earlier. Early identification can lead to earlier intervention which can have a profound impact on the long-term outlook for these patients. For example, smokers who show an accelerated decline in their lung function could have aggressive efforts aimed at helping them to stop smoking. Patients with significantly reduced airflow (which is how fast they are able to force air out of their lungs) may benefit from taking medications designed to open their airways.

Today there is a new initiative known as the National Lung Health Education Program (NLHEP). This program is designed to increase the awareness of physicians, healthcare workers, and patients on the need to perform spirometry. Dr. Thomas Petty, a pulmonologist and the “Grandfather of Pulmonary Rehabilitation,” is a leader in this effort. Dr. Petty believes that, “All primary care deliverers need a spirometer for their office.” Primary care deliverers, which include Family and General Practitioners, General Internists, Nurse Practitioners, and others provide the bulk of care to these patients early in the disease process. Yet only about one in five currently have a spirometer, and many who do have one do not utilize it as often as they should.



Spirometry is a powerful predictor of patients at risk of premature death due to a number of conditions.

- Spirometry is more valuable in predicting premature death from heart attack than the ECG.
- In clinical studies, middle-aged patients with mild reductions in their lung function have a 1% risk of fatal lung cancer within five years (which is more than **20 times** the total number of deaths from heart attack and stroke).
- Patients with an accelerated decline in spirometry numbers are at a much higher risk of developing COPD (i.e. emphysema and chronic bronchitis).

If you meet one or more of the criteria indicating the need for spirometry testing, talk with your physician about this test. Ask if he or she feels like it would be a beneficial test for you to have done. If you have already been diagnosed with lung disease or you are a smoker, spirometry testing should be repeated every 1-2 years and it should also be repeated when medications which have the potential to alter lung function (e.g. inhalers, steroids, theophylline) are added, deleted, or dosages changed.

If you or your physician have questions concerning spirometry testing, our expert clinicians would be happy to discuss it. Respiratory therapists have had specialized training in the provision of spirometry and can be helpful to both you and your physician in this regard.

Who should have Spirometry Testing performed?

- Smokers over 40 years old or those with a 20 pack year history (pack years = packs per day multiplied by years smoked)
- Patients with unexplained cough, wheezing, shortness of breath or other respiratory symptoms
- People with exposure to respiratory irritants (e.g. dust, smoke, fumes) on the job
- Frequent “colds” or allergic rhinitis
- Confirming the diagnosis of COPD, asthma, emphysema, or chronic bronchitis
- Family history of lung disease
- Patients with conditions which can affect lung function. Retesting should be performed:
 - Every one to two years for those with asthma, COPD, other lung diseases, and for smokers
 - After changes in respiratory medications