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AFFILIATED WITH **JOHNS HOPKINS** INTERNATIONAL



Pulmonary Function Testing

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Lung function tests are performed within the Pulmonary Function laboratory and include numerous procedures to diagnose lung problems. The three most common pulmonary function tests ordered by your physician are: [spirometry](#), [full pulmonary function survey](#), and [methacholine challenge tests](#).

- **Spirometry:** This pulmonary function test is a simple breathing test that measures how much air you can blow out of your lungs and how quickly. It is often used to determine the amount of airway obstruction you have. Airway obstruction is most commonly seen in diseases like asthma & chronic obstructive pulmonary diseases (or COPD, a disease mainly related to smoking). Spirometry is usually done before and after you inhale a short-acting medication called a bronchodilator, such as ventolin. The bronchodilator causes your airways to expand, allowing for air to pass through freely. This test helps your doctor better assess your progress and helps him adjust your treatment plan.

- **Full Pulmonary Function Survey:** This test includes a Spirometry, as well as more exact measurements of the Lung Volumes and measurement of the diffusion capacity.

Spirometry is an expiratory maneuver that measures exhaled volume or the vital capacity but does not measure other lung volumes. The evaluation of these volumes is important in certain restrictive disorders such as lung fibrosis, as well as in certain obstructive lung diseases.

The measurement of the diffusion capacity evaluates the capacity of the lungs to transfer gases. For example, this is impaired by increased alveolar-capillary membrane thickness like in lung fibrosis.

- **Methacholine challenge test:** This lung function test for asthma is performed if your symptoms and screening spirometry do not clearly or convincingly establish the diagnosis of asthma. Methacholine is an agent that, when inhaled, causes the airways to spasm (contract involuntarily) and narrow if asthma is present. During this test, you inhale increasing amounts of methacholine aerosol mist before and after spirometry. The methacholine test is considered positive, meaning asthma is present, if the lung function drops by at least 20%. A bronchodilator is given at the end of the test to reverse the effects of the methacholine.

How Do I Prepare for a Lung Function Test?

Ask your doctor if there is anything you need to do to prepare for a lung function test. Be sure to tell your doctor if you have recently had a viral infection, such as a cold, as these might affect the test results.

Other general preparations to follow before lung function tests include the following:

- Do not smoke the day of the test.
- Do not have coffee, tea, cola, or chocolate before the test.
- If you must, have a light meal before the test.
- Avoid exercise and cold air exposure before the test.

Can I use Asthma Drugs before a Lung Function Test?

Be prepared to adjust your inhalers since some can affect the test results. Your doctor will also tell you how long before testing you should discontinue any drugs you are taking. If you feel you must take your medication before the test, please inform your doctor. Different medications must be stopped at different intervals:

- Short-acting inhaled bronchodilators like Ventolin and Atrovent should be stopped eight hours before the test.
- Long-acting inhaled bronchodilators like Seretide, Serevent, Symbicort, Oxis, Foradil, Spiriva, and Onbrez cannot be taken for 36 hours.

For any questions or clarification please call your cardiologist or the COP department at 01/372888 extension: 1164