

Pulmonary Function Tests in COPD

COPD MINI-SERIES #4

Pulmonary function tests (PFTs) are breathing tests to find out how well you move air in and out of your lungs and how well oxygen enters your body. The most common PFT's are *spirometry*, *diffusion studies* and *body plethysmography* (ple-thiz-mä-gra-fee).

Sometimes only one test is done, other times all tests will be scheduled, often on the same day.

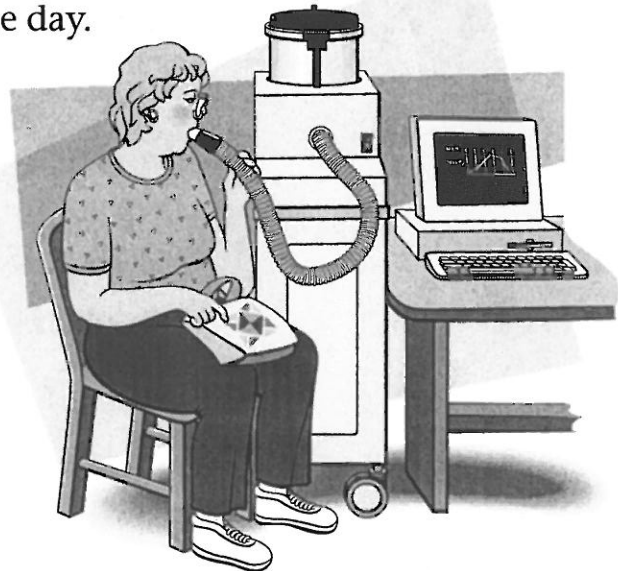
To get the most accurate results from your breathing tests:

1. Do not smoke for at least 4 hours before the test.
2. Do not drink alcohol for at least 4 hours before the test.
3. Do not exercise 30 minutes before the test.
4. Do not wear tight clothing that makes it difficult to take a deep breath.
5. Do not eat a large meal 2 hours before the test.

What is spirometry?

Spirometry is the most commonly ordered test to find out if you have Chronic Obstructive Pulmonary Disease (COPD). The spirometry test is often repeated after giving you breathing medications to find out how much improvement you get with these medications. This test is done by having you take in a deep breath and blow hard into a tube connected to a machine.

This machine measures the amount of air you can move in and out of your lungs. It usually takes 30 minutes to complete this test.



What should I know before taking this test?

- You may be asked not to take your breathing medicines before the test.
- It takes effort to do the test and you may become tired. This is expected.
- Instructions will be given on how to do the test. If you do not understand them, ask the technician to repeat them.
- If you become light-headed, or dizzy during the test, immediately stop blowing and let the technician know.
- To get the best results, the test will be repeated 2-3 times.

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What are diffusion studies?

Diffusion tests find out how well the oxygen in the air you breathe moves from your lungs into your blood. This test is done by having you breathe into a mouthpiece connected to a machine. You will be asked to empty your lungs by gently exhaling out as much air as possible. Then you will breathe in a quick but deep breath, hold your breath for 10 seconds, and breathe out as instructed. It usually takes about 15 minutes to complete this test.

What should I know before taking this test?

- Do not smoke and stay away from others who are smoking for at least 4 hours before this test.
- If you are on oxygen, you will usually be asked to be off oxygen for a few minutes before taking the test.

What is body plethysmography?

Body plethysmography is a test to find out how much air is in your lungs after you take in a deep breath and how much air is left in your lungs after breathing out as much as you can. No matter how hard we try, we can never exhale all of the air from our lungs. With COPD, the amount of air left in your lungs is often more than normal. Measuring the total amount of air your lungs can hold and the amount of air left in your lungs after you breathe out gives your health care providers information about your COPD and helps guide them in your treatment. This test requires that you sit in an enclosed plastic box which you can see through. You will be asked to wear a nose clip, and instructions will be given on how to breathe through a mouthpiece. It usually takes about 15 minutes to complete this test.

What should I know before taking this test?

- If you are on oxygen, you will usually be asked to be off oxygen during the test.
- Let the technician know if you have difficulty in closed spaces.

Sources:

1. P. Meek, S.C. Lareau, B. Fahy, E. Austegard. ATS/ERS Standards for the Diagnosis and Management of Patients with COPD, Patient Section. www.thoracic.org/COPD/pdf/copdpatient.pdf
2. ATS/ERS Task Force: Standardization of Lung Function Testing. Eds. V. Brusasco, R. Crapo & G. Viegi. www.thoracic.org/adobe/statements/pft1.pdf

Additional Lung Health Information

American Thoracic Society

www.thoracic.org/COPD/patients.asp

National Lung Health Education Program

www.nlhep.org

Global Initiative for COPD

www.goldcopd.com

Rx Key Points

- ✓ Ask questions if you do not understand the instructions for the test.
- ✓ If you have a cold or flu, let the test center know because they may want to reschedule your test.
- ✓ If you have difficulty with closed spaces (claustrophobia), let the test center know in case one of the tests involves being enclosed.
- ✓ Ask if there are any medications you should stop before being tested.

Doctor's Office Telephone:
