



What are pulmonary function tests?

Pulmonary function tests (PFTs) are non-invasive tests that show how well the lungs are working. The tests measure lung volume, capacity, rates of flow, and gas exchange. This information can help your healthcare provider diagnose and decide the treatment of certain lung disorders.

There are 2 types of disorders that cause problems with air moving in and out of the lungs:

- **Obstructive.** This is when air has trouble flowing out of the lungs due to resistance. This causes a decreased flow of air.
- **Restrictive.** This is when the chest muscles can't expand enough. This creates problems with airflow.

Normal values for PFTs vary from person to person. The amount of air inhaled and exhaled in your test results are compared to the average for someone of the same age, height, sex, and race. Results are also compared to any of your previous test results. If you have abnormal PFT measurements or if your results have changes, you may need other tests.

Why might I need pulmonary function tests?

There are many different reasons why pulmonary function tests (PFTs) may be done. They are sometimes done in healthy people as part of a routine physical. Or you may have PFTs if your healthcare provider needs help to diagnose you with a health problem such as:

- Allergies
- Respiratory infections
- Trouble breathing from injury to the chest or a recent surgery
- Chronic lung conditions, such as asthma, bronchiectasis, emphysema, or chronic bronchitis
- Asbestosis, a lung disease caused by inhaling asbestos fibers
- Restrictive airway problems from scoliosis, tumors, or inflammation or scarring of the chest wall
- Sarcoidosis, a disease that causes lumps of inflammatory cells around organs such as the liver, lungs, and spleen
- Scleroderma, a disease that causes thickening and hardening of connective tissue

PFTs may be used to check lung function before surgery or other procedures in patients who have lung or heart problems, who are smokers, or who have other health conditions. Another use of PFTs is to assess treatment for asthma, emphysema, and other chronic lung problems. Your healthcare provider may also have other reasons to advise PFTs.



What are the risks of pulmonary function tests?

Because pulmonary function testing is not an invasive procedure, it is safe and quick for most people. But the person must be able to follow clear, simple directions.

All procedures have some risks. The risks of this procedure may include:

- Dizziness during the tests
- Feeling short of breath
- Coughing
- Asthma attack brought on by deep inhalation

In some cases, a person shouldn't have PFTs. Reasons for this can include:

- Recent eye surgery, because of increased pressure inside the eyes during the procedure
- Recent belly (abdominal) or chest surgery
- Chest pain, recent heart attack, or an unstable heart condition
- A bulging blood vessel (aneurysm) in the chest, belly, or brain
- Active tuberculosis (TB) or respiratory infection, such as a cold or the flu

Your risks may vary depending on your general health and other factors. Ask your healthcare provider which risks apply most to you. Talk with him or her about any concerns you have.

Certain things can make PFTs less accurate. These include:

- Use of medicines that open the airways (bronchodilators)
- Use of pain medicines
- Pregnancy
- Stomach bloat that affects the ability to take deep breaths
- Extreme tiredness or other conditions that affect a person's ability to do the tests

What happens during pulmonary function tests?

. In most cases, the procedure will follow this process:

- You'll be asked to loosen tight clothing, jewelry, or other things that may cause a problem with the procedure.
- If you wear dentures, you will need to wear them during the procedure.
- You'll need to empty your bladder before the procedure.
- You'll sit in a chair. A soft clip will be put on your nose. This is so all of your breathing is done through your mouth, not your nose.
- You'll be given a sterile mouthpiece that is attached to a spirometer.
- You'll form a tight seal over the mouthpiece with your mouth. You'll be instructed to inhale and exhale in different ways.
- You will be watched carefully during the procedure for dizziness, trouble breathing, or other problems.
- You may be given a bronchodilator after certain tests. The tests will then be repeated several minutes later, after the bronchodilator has taken effect.

What happens after pulmonary function tests?

If you have a history of lung or breathing problems, you may be tired after the tests. You will be given a chance to rest afterwards. Your healthcare provider will talk with you about your test results during your two-week follow up appointment.