

# PULMONARY FUNCTION TESTING AND PREPARING FOR THE TEST

Kristen Baker, PA-c, MMSc, AE-c

Pulmonary function tests (PFT's) measure how well your child can move air in and out of the lungs. PFT's, also called breathing tests, help determine if your child has lung disease or asthma. Once your child reaches age 5 or 6, he/she may be asked to do a PFT.

Trained PFT assistants will direct you and your child throughout the tests.

Often the breathing tests are presented as a blowing game. Sometimes blowing a toy like a party horn at home can be used to help your child practice what will be done during the breathing tests and will help get the child used to the procedure of "blow, blow, blow out the air hard and fast!"

Before doing PFT's, your child's height will be measured because his or her lung size is related to his or her height. Your child's test results can be

compared to the results of other children of the same sex, age, race, and height, like the standard ranges on a growth chart. A common PFT test is called spirometry.



## What is Spirometry?

Spirometry is the most common lung function test. It measures how much air is moved in and out of the lungs and how fast the air moves. To get the best results, your child will be asked to follow very specific instructions. Most children can do spirometry by age 6, though some preschoolers are able to perform the test at a younger age.

Your child may be asked to wear a nose clip to keep him or her from breathing through his or her nose during the test. Your child will then be asked to take in a deep breath and to blow the air out into a mouthpiece that is connected to a computer. The computer measures how much and how fast the air is blown out. Your child will repeat the test at least two times, but likely three or four times to get the most consistent result. This test can take up to 30 minutes to complete.

One of the tests measured during spirometry is your child's peak flow. The peak flow requires your child to blow out as hard and as fast as they can. It is a measure of upper airway lung function.

It is helpful to record your child's peak flow reading at home or in your doctor's office.

However, spirometry is a more accurate test to measure lung problems or asthma than just a peak flow reading.

Your child may become tired or frustrated during the test. This is not uncommon.

Sometimes it takes several visits to the office to practice the test before your child can fully complete the test. Coughing during the test is to be expected. Tell your child that they may rest between blowing into the machine, in order to catch his or her breath. Sometimes this test is repeated after your child inhales medication. This test is called a post- bronchodilator or bronchodilator response test.

## What is a post bronchodilator or bronchodilator response test?

Your healthcare provider may want to see if your child has an improvement in his or her breathing after inhaling a bronchodilator (a medicine that opens the breathing tubes).

Your child will be asked to breathe in a bronchodilator medicine (usually albuterol) after completing the breathing test. About 10-15 minutes after taking the medicine, your child will repeat the breathing test. The results from the second test will be compared to the first test to find out if the medicine has improved your child's breathing.

### **Why shouldn't I give my child some of their breathing medications before the test?**

Some breathing medicines will prevent the test from showing whether your child's airways have a good response.

Short acting bronchodilators such as albuterol or levalbuterol should not be taken within *four* hours before the test (unless the child needs to use the medication to aid with breathing, or any asthma symptoms!) Also, you may be told to stop giving your child a long acting bronchodilator (generic name/brand name) salmeterol/Serevent®, or formoterol/Foradil® or combination inhalers that include one of these bronchodilators plus a steroid. Examples of these combinations are Advair® and Symbicort®. If your child is taking either of these medications, you may be asked not to give this medication to your child from 12 to 24 hours prior to the test.

### **How can I help to make the breathing test less stressful for my child and me?**

1. Be patient with your child during the test. Support and encouragement helps immensely.
2. Explain to your child that the test does not hurt but requires paying attention.
3. Explain to your child that the breathing test is being done are to find out how to make their breathing better.
4. Schedule the test at a time of day that your child is usually not tired or hungry.
5. The staff will explain the test to you and your child. If you or your child does not understand, ask the staff to repeat the instructions.
6. If your child has a cold, sinus infection, or other reason that makes them unable to take the test, let your provider know. It will then be determined if your child can take the test or not.

### **Before Arriving To Your Asthma Appointment\*\*\*:**

1. If you are concerned about your child's breathing the day of testing, notify us immediately.
2. Prepare your child for PFT's by explaining the test before arriving at the office.
3. Remember to stop the medications that should not be taken by your child before the test as stated above.
4. Plan extra time to be here when your child is doing lung function tests on the day of your appointment. Several tests and rest periods may be needed to get the best results. Bring a drink of water for your child to have after the test. Food is not allowed in the testing room, but bringing a healthy snack for after the appointment is a good idea!

**\*\*\*IF YOUR CHILD IS COMING FOR PFTs and TREADMILL TESTING PLEASE HAVE THEM WEAR SNEAKERS, SHORTS, and BRING A WATER BOTTLE. We cannot test children who are not wearing running shoes.**

