

Pulmonary Function Testing

Pulmonary function testing (PFT) in children is important in evaluating a child with known or suspected asthma. This test can provide information about how well the lungs are working. Children over 5 years of age are usually capable of performing the test. Our Pulmonary Function Lab performs PFT such as Spirometry, Impulse Oscillometry, IOS and Exhaled Nitric Oxide levels.

What happens during the spirometry test?

The test measures how much (volume) and how fast (flow) your child can move air into and out of their lungs. Your child may have the test done in a special room that stores the machine, or a portable spirometry machine may be brought into the exam room. Your child will be instructed on how to perform the test. They will be asked to take in a deep breath and blow hard and fast into a filtered mouth-piece that is attached to the machine. They will be encouraged to continue to blow out until their lungs feel completely empty. To make sure that no air is escaping from their nose, they may be given a nose clip to wear. They will be asked to repeat this test several more times until there are two or three good efforts.



How does it work?

A sensor, which is part of the spirometer, will calculate and show your blowing results. The results demonstrate your child's rate of air flow or how fast they were able to blow, and the volume of air flow or the amount that they were able to blow out within the first second of blowing.

What does it mean?

If the findings suggest an airflow obstruction (narrowing), your health care provider may have your child inhale a medication called a bronchodilator. This medication should cause the airways to open back up. A repeat or post spirometry will be obtained. The doctor will review the test results with you.

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Fractional Expired Nitric oxide Testing, FeNO

Measurement of fractional nitric oxide (NO) concentration in exhaled breath ($FeNO$) is a simple, and safe method of measuring airway inflammation .

What happens during the FeNO test?

Your child will hold a small box with a mouth piece. They will breath in, and blow out into the mouthpiece.

How does it work?

FeNO testing measures the level of nitric oxide gas in an exhaled breath. This sample is collected by having your child breath into a mouthpiece of a machine the takes the measurement.

What does it mean?

The FeNO level indicates airway swelling, shows response to controller medications, may be used to determine the need for controller medicine, and may identify when therapy was not used.

Impulse Oscillometry System , IOS

IOS shows the difference in small airway obstruction from large airway obstruction. IOS testing only requires passive cooperation, and may be done in younger children.

What happens during the IOS test?

Your child may have the test done in a special room that stores the machine. They will breath normally through a mouthpiece. They may feel a slight vibration in the airflow as they breath.

How does it work?

IOS uses sound waves to measure lung functions.

What does it mean?

If the findings suggest an airflow obstruction (narrowing), your health care provider may have your child inhale a medication called a bronchodilator. This medicine should cause the airways to open back up. A repeat IOS will be obtained. The doctor will review the test results with you.