

Lung function tests: information for families

Lung Function tests are carried out by respiratory physiologists in our Lung Function Unit. They aim to measure how well your child's lungs are working and how well oxygen we breathe in from the air moves to our blood and waste carbon dioxide is breathed out of the body. They are often used to monitor lung function over time. We aim to make the tests as fun as possible for children and young people. This information sheet from Great Ormond Street Hospital (GOSH) describes what will happen when your child comes for lung function testing. An Easy Read information sheet is also included for your child.

Your child will either have one or a number of these tests depending on what your doctor has requested. These could take place on the same day as your child's outpatient appointment, in the lung function lab or on the ward if they are currently an inpatient.

Do I need to bring anything?

You should receive a letter with the instructions on where to come for the test. No other preparation is needed for the test.

Important

The person bringing your child for the test should have 'Parental Responsibility' for them. Parental Responsibility refers to the individual who has legal rights, responsibilities, duties, power and authority to make decisions for a child. If the person bringing your child does not have Parental Responsibility, we may have to cancel the test.

Lung function tests

The lung function laboratory has a number of machines designed to test different aspects of your child's lung function. We will explain each machine as we need to use them. Here is a bit more information about each of the tests we offer.

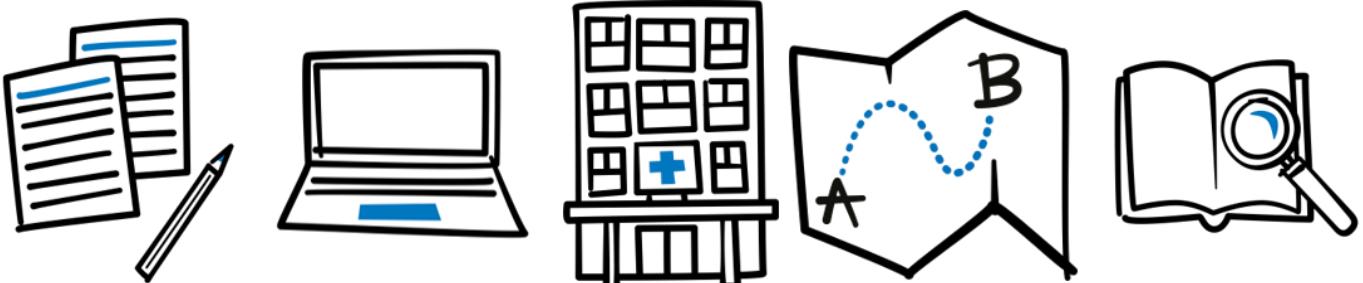
Spirometry

This is the most common lung function test we do. This looks at how fast your child can blow air out of their lungs through the airways. Your child will be asked to breathe in until they are full, and then blow out as hard and as long as they can through a mouthpiece.

There are a range of computer-based incentives such as blowing out candles to encourage your child to do this as well as they can.

Bronchodilator response (BDR)

Sometimes after spirometry, your child may need a BDR test to work out the effect of a medication (salbutamol) on the airways. Your child will do spirometry before taking the medication and then



again 15 minutes afterwards to see if there is any change in their lung function.

The physiologist will help your child understand how to take the medication using an inhaler.

Fractional exhaled nitric oxide (FENO)

This test can measure inflammation in the airways. Your child will need to take a deep breath through a device similar to a straw. They will then have to blow out gently and smoothly as if they are cooling a cup of tea.

We use games to encourage your child to blow out correctly for this test.

Gas transfer (TLCO)

This test looks at how well oxygen moves into the lungs from the air we breathe and how well it passes from the lungs into our blood. Your child will need to take a big breath to fill their lungs completely with a harmless gas mixture and then hold their breath for 10 seconds before blowing out all the air until they are empty.

Lung volumes (plethysmography)

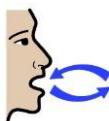
For this test your child will sit inside a box a bit like a telephone box. They will do a range of breathing exercises to calculate the volume of air in the lungs.

Are there any risks?

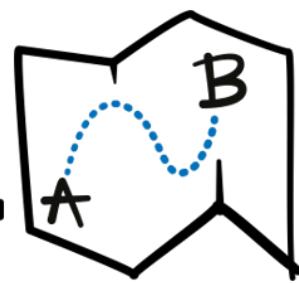
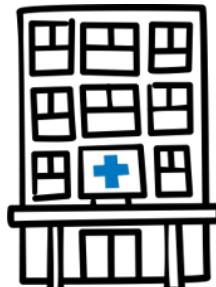
All of the tests will be performed by a qualified physiologist. Each test your child needs to perform

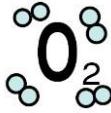
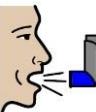
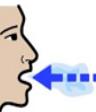
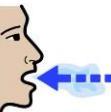
If you need any further advice or information about any of these tests, you can contact the Lung Function Lab on 020 7405 9200 ext. 5456 or via the MyGosh portal at www.gosh.nhs.uk/mygosh once you have registered.

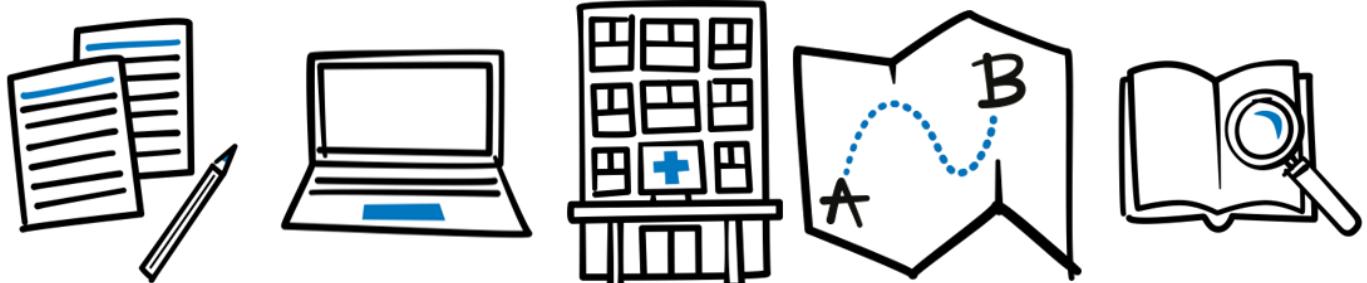
Having breathing tests

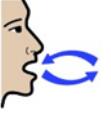


When you breathe, air goes into your nose and mouth, down the tube to your lungs. You have two lungs inside your chest.



	Air contains a gas that the body needs to work, called oxygen (said: ock-see-jen). Your body takes the oxygen from the air and moves it into your blood cells.
	Blood carries oxygen and goodness to every part of your body. Your body needs oxygen to work.
	We would like to see how well your lungs are working. This is called a lung function test. When you get to the unit, we may ask you some questions about your breathing'
	Next we will measure how tall you are and what you weigh. After this, you will start the lung function test. You may have one test during the visit or lots of different ones.
	One test is a blowing test. We will ask you to blow as fast and hard as you can for as long as you can into a plastic tube. You can play a game to see how many candles you can blow out on the screen.
	Another test looks at whether an inhaler helps you breathe better. You will do the blowing test, then use an inhaler. Then you do the blowing test again.
	Another test looks at whether your lungs are sore. You will breathe in through a tube then blow out gently and slowly.
	Another test checks if oxygen is going from your lungs to your blood. You will take a deep breath through a mouthpiece then let it out until your lungs are empty.



	The last test looks at how much air your lungs can hold. You will need to sit in a plastic cabin that looks a bit like a phone box.
	You might meet the doctor that day to hear the results of the test or you will discuss the results of the test at your next appointment.
	Please ask us if you have any questions.



