

Patient information factsheet

Pulmonary function tests (without inhalers)

We have given you this factsheet to explain what will happen at your pulmonary function test appointment. We hope it will help to answer some of the questions you may have. If you have any further questions or concerns, please contact us using the details at the end of this factsheet.

What are pulmonary function tests?

Pulmonary function tests are breathing tests that measure:

- how well your lungs move air in and out
- how fast your lungs move air in and out
- the size of your lungs
- how well oxygen is absorbed into your blood

There are several different pulmonary function tests. The tests you have will depend on your symptoms, diagnosis, medication and your doctor's recommendations.

The tests are often only able to be performed in hospital by a respiratory physiologist (a healthcare professional who diagnoses and treats people with lung disease and breathing difficulties) due to the equipment needed.

Why have I been referred for pulmonary function tests?

Common reasons for having pulmonary function tests include:

- to help with diagnosis
- to monitor a known lung condition
- to measure a person's fitness levels before an operation

Your doctor will have explained why they have referred you for pulmonary function tests.

How should I prepare for my appointment?

Please contact us using the relevant details on page 3 as soon as you receive your appointment letter if you have:

- a chest infection
- had eye, chest or abdominal surgery in the last six weeks
- taken antibiotics for your chest in the four weeks before your appointment

Medication

Try to avoid using your inhalers for 24 hours before your testing appointment. If this isn't possible, take your inhaler(s) as needed and tell the respiratory physiologist performing your pulmonary function tests the name of the inhaler(s) you took and when you took them. Please note that this may result in us not being able to complete some of the tests requested by your doctor. We will discuss this with you at your appointment.

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To get the best possible test results, please do not:

- smoke or vape for 24 hours before your appointment
- drink any caffeinated or alcoholic drinks for at least four hours before your appointment
- do any heavy exercise for at least 15 minutes before your appointment
- have any large meals one hour before your appointment (a light meal such as a sandwich is fine)
- wear tight or restricting clothing on the day of your appointment

Important information

- If you are more than 10 minutes late for your appointment and have not called ahead, we will not be able to test you and we will reschedule your appointment for another day.
- If you do not attend for any reason, we will remove you from our booking list and we will not rebook your appointment.

What will happen during the appointment?

During your appointment, you will have one or more of the following pulmonary function tests. We will explain what each test involves at each stage and answer any questions you may have.

Spirometry

The spirometry test looks at the volume you are able to exhale (breathe out) and the speed at which you can exhale. We will ask you to breathe gently into the mouthpiece of a spirometer (a medical device) and then take a large, deep breath in and blow out as hard as you can for as long as you can until there is nothing left in your lungs.

Lung volume measurement

The lung volume measurement test looks at the overall size of your lungs and the volume of air that remains once you have exhaled as much as you can.

Regardless of how hard you try, there is always a bit of air left in your lungs. The volume of this can give us valuable information on how well your lungs are working and may indicate the best way to treat you. The usual method involves using a large clear box called a 'body plethysmograph'. For the test, you will need to sit inside the box. We will ask you to wear nose clips and breathe through a mouthpiece.

Please contact us as soon as you receive your appointment letter if you think you will be unable to sit comfortably within the box. For example, if you:

- have limited mobility
- use a wheelchair
- have claustrophobia (a fear of confined spaces)

Depending on your specific needs, we may perform the test in a different room that is more suitable for you.

Gas transfer test

The gas transfer test looks at how well the air that you breathe into your lungs travels to your blood. To help us measure this, we will use a tracer gas. As in the previous two tests, we will ask you to breathe through a mouthpiece.

For this test, it is best practice to have an up-to-date haemoglobin level. Haemoglobin is a substance found in your red blood cells which transports oxygen around your body. If we do not have a recent haemoglobin result for you in our records (within four weeks of your pulmonary function test), we will ask you during your appointment if you are happy for us to perform a finger prick blood test to measure your haemoglobin level.

Bronchodilator response testing

The bronchodilator response test involves performing a second spirometry 15 to 20 minutes after using a bronchodilator (inhaler). This will help your doctor to decide what, if any, medicine will be of benefit to you.

Six minute walk test

The six minute walk test is a less commonly requested pulmonary function test. It measures how far you can walk in six minutes and the effect this exercise has on your blood oxygen levels and heart rate.

For this test, we will clip a pulse oximeter (a small device that measures your blood oxygen levels and heart rate) to your ear. We will then ask you to walk at a brisk pace continuously for six minutes between two cones set out approximately 20 metres apart.

There are some other types of pulmonary function tests, but these are requested less often. If your doctor requests you have a test that is not discussed in this factsheet, they will explain it to you during your clinic appointment and we will then explain it again to you on the day of your test.

How long will the appointment be?

The appointment will be between 60 and 90 minutes long, depending on which tests your doctor has requested you have.

What will happen after the appointment?

You will be able to return to your usual daily activities immediately after the appointment.

Are there any risks?

Pulmonary function tests are very safe and rarely cause any issues after testing.

When will I receive my results?

We will not be able to give you any results on the day. We will send your results to the doctor who referred you for the pulmonary function tests. Your doctor will then contact you to discuss the results.

Contact us

If you have any questions or concerns about pulmonary function tests, please call our respiratory physiology team on **023 8120 1360** (Monday to Friday, 9am to 4pm).

If you wish to cancel or reschedule your appointment, please call the relevant booking team below:

- If your appointment is at **Southampton General Hospital**, please call **023 8120 2093** (Monday to Friday, 9am to 3pm).
- If your appointment is at **Royal South Hants Hospital**, please call **023 8120 2454** (Monday to Friday, 8.30am to 4.30pm).

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Useful links

www.nhs.uk/conditions/spirometry

www.asthmaandlung.org.uk/symptoms-tests-treatments/tests/lung-volume

www.asthmaandlung.org.uk/symptoms-tests-treatments/tests/gas-transfer

If you are a patient at one of our hospitals and need this document translated, or in another format such as easy read, large print, Braille or audio, please telephone **0800 484 0135** or email **patientsuppothub@uhs.nhs.uk**

For help preparing for your visit, arranging an interpreter or accessing the hospital, please visit **www.uhs.nhs.uk/additionalsupport**