

Patient information

Advanced Respiratory Tests

This leaflet gives you general information about the lung function breathing tests. However, it does not replace the need for the personal advice from the health care professional. Please contact us if you require more information.

Why are lung function tests performed?

There are several reasons for performing these tests, which include the following:

- To help make a diagnosis and to quantify the degree of lung damage.
- To assess the progress of your existing breathing condition by comparing these tests with previous results.
- To see how your breathing condition improves with different treatments.
- To help assess fitness before surgery.

Before the procedure

In order to achieve the most accurate results please note the following requests:

- Avoid smoking for at least 24 hours (if possible) prior to your lung function test.
- Avoid alcohol for 4 hours prior to your lung function test.
- Avoid vigorous exercise 30 minutes prior to your lung function test.
- Avoid tight clothing and eating a substantial meal for at least 2 hours prior to the lung function test (a light meal is fine).
- Follow the instructions given in your appointment letter regarding the use of respiratory medications.

If you have to take any of your medication (that you have been asked to withhold), because you are too breathless, please contact the Lung Function Department on 01284 713509, as it is possible your appointment will need to be changed.

What are advanced respiratory tests?

In addition to the tests described in the Lung Function Tests leaflet, the doctor may require additional information and request other advanced assessments. These include simple exercise testing by Six Minute Walk Test, Skin Prick Allergy testing, Respiratory Muscle Strength assessments and Challenge testing (Hypoxic and Bronchial). The investigations requested will depend on the clinical features you present with. Your appointment letter will indicate which test/s have been requested and will detail any special instructions that apply for these tests.

Six minute walk test

Occasionally the doctor may need to know how your breathing and oxygen levels are affected by exercise. In these circumstances, you will be asked to do a six minute walk test (6MWT), where you will walk at your own pace for a period of six minutes with a special clip on your finger which measures your oxygen level and the heart rate. Please note this test does not involve a treadmill.

Continue to take all medications as prescribed and **DO NOT STOP taking any inhaled medications** (unless otherwise instructed). Please **DO NOT** wear nail varnish to your appointment. You should **wear comfortable clothing and flat footwear** suitable for walking in.

Skin prick tests (SPT)

Skin prick tests are also performed in the Respiratory Physiology Department. This involves testing the skin for a reaction to common allergens that can act as a trigger in some asthmatic patients. SPT is usually carried out on the inner forearm, but in some circumstances may be carried out on another part of the body, such as the back. The skin is labelled with a marker pen and a drop of the allergen is placed on the skin and the skin is then pricked through the drop using the tip of a lancet – this can feel a little sharp but should not be painful and should not bleed. Several allergens can be tested for at one time and the results from the skin response are available within 20-30 minutes. The test allergens are selected following discussion with your doctor and also based upon your history on the test day.

Please note this test will not trigger an asthmatic attack.

It is important that you STOP using antihistamines for at least 7 days prior to testing. If taken by mistake, please contact the Lung Function Department on 01284 713509 as it is likely your appointment will need to be changed.

Respiratory muscle strength assessments

These tests measure the strength of muscles used for breathing. A respiratory muscle strength assessment is usually comprised of three different tests: Maximal Inspiratory Pressure (MIP), Sniff Nasal Inspiratory Pressure (SNIP) and Maximal Expiratory Pressure (MEP). These tests are performed in a similar way to the lung function tests with you being seated and breathing into specialist equipment via a filter and mouthpiece.

MIP: It measures the strength of your inspiratory muscles i.e. the diaphragm. For this test you will be asked to take a short and sharp breath in through the mouth piece against a tiny opening.

SNIP: It measures the strength of your breathing in muscle i.e. the diaphragm. For this test we will place a small nasal device to one nostril and you will be asked to take a short and sharp sniff through the nose.

MEP: It measures the strength of your expiratory muscles i.e. the chest muscles. For this test you will be asked to take a short and sharp breath out through the mouthpiece against a tiny opening.

Like some of the other breathing tests, you may have to repeat the tests a number of times to obtain accurate results. This assessment takes approximately 30 minutes to complete.

Erect and supine spirometry

This is an additional test to assess the strength of your major breathing muscle called the diaphragm. For this test you will be asked to perform spirometry (see Lung Function Tests leaflet) in both a sitting and a lying position. In people with diaphragmatic weakness, the amount of air that you can breathe in and out is significantly reduced in the lying position compared to the sitting position. This assessment will take approximately 20 minutes to complete.

Air flight assessment (hypoxic challenge)

Inspired oxygen pressure is reduced during air travel. This has minimal or no effect in travellers with healthy lungs, however, for patients with lung disease flying may present a significant problem. Therefore, this test is performed to assess the need of in-flight oxygen in people at risk due to their underlying lung disease.

This test involves breathing reduced oxygen air via a mask. You are required to sit, relax and breathe normally for 20 minutes. The amount of oxygen you breathe will be similar to that you will breathe if you are flying in an aeroplane. We will monitor your oxygen and heart rate every minute during the test by an oximeter, which will be placed on your fingertip. This is not an invasive test and it is painless. The test will determine whether you need to take supplemental oxygen on your flight.

If during the test your oxygen level drops below the desired level, you will be given supplemental oxygen so that your oxygen level can be maintained at a desired normal level. If oxygen is given during the test the procedure will take a further 20 minutes.

Bronchial challenge test using Mannitol

A bronchial challenge test is used to determine if your airways are over sensitive. Airway sensitivity may be caused by inflammation of the airways and is a feature of asthma. People with airway sensitivity are often very susceptible to factors in the environment such as dust, smoke and other irritants.

Mannitol is a naturally occurring sugar alcohol commonly used as an ingredient in tablets. When inhaled by people with airway sensitivity it causes the airways to narrow which is monitored using a simple breathing test. The airway narrowing can be associated with breathlessness, chest tightness, cough or wheeze, however the effect is short lived and any effect will be quickly reversed by using an inhaler.

In preparation for a bronchial challenge test you will need to temporarily stop taking certain medications; full instructions will be provided with your appointment letter.

What are the risks?

Some of the tests are tiring, but you will be given time to recover between tests. However if you find the tests too difficult or uncomfortable they can be stopped at any time. During challenge testing some patients may experience some respiratory symptoms, for example cough or shortness of breath, but you will be monitored carefully throughout the procedure and the test can be terminated or medication administered to relieve the symptoms.

Test results

The results are usually available immediately after testing. If you have a clinic appointment on the same day you might be given the results to take with you to your appointment. Otherwise the results will be sent to your doctor.

Further important information

Please inform the Lung Function Department on 01284 713509 if any of the following apply to you:

- If you have had any thoracic, abdominal or eye surgery in the last month.
- If you have had a heart attack or stroke in the last month.
- If you have been told by a Doctor that you have a collapsed lung.
- If you have a current chest infection requiring antibiotic treatment or of you are coughing up blood.
- If you are suffering from illness like diarrhoea and vomiting.

How to get to the Lung Function Department

These tests are performed in the Lung Function Department which is situated on the ground floor in the Therapy Services area of the hospital. Please enter via the Therapy Services entrance which is to the right of the Main Outpatients entrance at the front of the hospital. Please report to the reception desk on arrival.

The instruction on how to get to the hospital is available in the trust main webpage or you can follow link below: <http://www.wsh.nhs.uk/Howtogettothehospital/GettingHere.aspx>

Please allow extra time for parking if you are coming by car. A Pay and Display system is in operation.

Disabled parking is allocated opposite the front, and at the side and rear of the hospital.

Cancellations

As we have a waiting list for appointments (*cancellations are reallocated*), early notice of cancellation is appreciated. Please contact **01284 713509** ASAP if you are unable to attend your appointment.

Who can I contact for more information?

If you are unsure why you have been asked to attend for the tests then please do not hesitate to contact the Lung Function Department on **01284 713509** and the Physiologist will assist you.

If you would like any information regarding access to the West Suffolk Hospital and its facilities please visit the disabledgo website link below:

<http://www.disabledgo.com/organisations/west-suffolk-nhs-foundation-trust/main>

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