



Breathing and lung function tests

Imaging scans

If you have symptoms that might be due to a lung problem, a chest X-ray or a scan of your lungs can sometimes be helpful.

Imaging tests can be done:

- to find out why you get breathless,
- why you have a cough or chest pain
- to see if a specific treatment is suitable for your lung condition
- to see if your condition has responded to treatment
- as a screening test in people who may be at risk of lung problems
- to monitor a lung condition

There are different types of imaging scan that can show a picture of your lungs and airways:

Test using X-rays

These are usually done in a radiology department.

- chest X-ray
- CT scan

Nuclear medicine tests

These usually involve an injection or breathing in a substance that shows up on a scanner.

- PET scan
- V/Q scan

Chest X-ray

What is a chest X-ray?

A chest X-ray is a procedure that uses X-rays to take a 2-dimensional, flat picture of the inside of your chest.

X-ray is a type of radiation that can pass through the body and is used to take a picture. Harder parts of the body like bone show up white on the picture. Solid tissues like the heart or liver also show up white. The lungs let more X-rays through and look black.

Although X-rays are a kind of radiation, the amount delivered in a chest X-ray is very small – about the same as a couple of days of normal background exposure – and is not harmful.

What is a chest X-ray used for?

Health professionals will use a chest X-ray to see inside your chest, looking at your lungs, ribs, heart or diaphragm. It's often the first test used in people with symptoms like breathlessness, coughing up blood or chest pain. An X-ray is often used along with a CT scan and other tests.

How can I prepare for a chest X-ray?

You'll usually receive an appointment letter. Read this carefully in case there is anything special you need to do to prepare. The main thing you need to do is to take off anything metal, such as jewellery, zips or belt buckles.

If you could be pregnant, it's important to tell the radiographer, so that they can reduce any exposure of your unborn baby to X-rays.

What happens during a chest X-ray?

You may have a chest X-ray as an outpatient, or during a stay in hospital.

During a chest X-ray, you'll be in one room while a health care professional, called a radiographer, stays next door or behind a screen. You'll need to take off any clothes on your top half, including shirts, vests and bras, and wear a hospital gown.

It's usually done standing up, though chest X-rays can be taken sitting or lying down if necessary. The X-ray machine will be pointed at your chest to take pictures. You need to hold your breath for a few seconds while the picture is taken. This makes sure that the image isn't blurred.

When will I get the results?

You won't usually get the results straight away, unless you are acutely unwell in A&E. You'll be given an appointment with your doctor to discuss the results, and what happens next.

CT scan

What is a CT scan?

CT stands for computed tomography. It uses X-rays to build a 3-dimensional picture of the inside of your body. This gives a detailed picture of your lungs, blood vessels and other organs.

You may be given an injection of material that shows up on the scan and can help to outline blood vessels. This is called contrast.

What's it used for?

Health care professionals will use a CT scan to understand what's going on inside your lungs. It can be used to see if your lungs appear normal and to help diagnose lung conditions.

It might also be used to decide what type of treatment is needed, or if you're a suitable candidate for treatment.

Sometimes a CT scan might be used to monitor a lung abnormality or response to treatment, for example in people with lung cancer.

How can I prepare for a CT scan?

You should receive a letter telling you how to prepare for your CT scan. Read this carefully to see if there are any special instructions, for example about eating and drinking.

You won't be able to wear anything made of metal during the scan, so you'll need to remove any metal jewellery, belts or clothing.

Tell hospital staff if you are allergic to iodine, as the contrast material injected as part of some scans may contain this. They will also ask if there is any possibility that you might be pregnant.

What happens during a CT scan?

You lie on a flat bed, which passes through the doughnut-shaped CT scanner as you hold your breath. Usually the scan itself only takes about 10 seconds. A health care professional called a radiographer will stay in the next room and operate the scanner.

You might be given an injection of contrast dye into a vein in your hand or arm.

Some people are anxious about having a CT scan and worry that they might get claustrophobic. In fact, even though you go through the scanner it is actually a doughnut shape rather than a tunnel so only a small part of you is actually inside and the scan itself takes only a few seconds. If you are worried, do let the people doing the scan know. They'll be able to answer any questions you have.

The scan itself is usually done while you hold a single breath and only takes about 10 seconds. You'll be able to go home the same day.

When will the results be available?

You won't usually get the results straight away. The scans have to be reviewed by a specialist called a radiologist. You'll usually be given an appointment with your doctor to discuss the results, and what happens next.

Get in touch with us to find support near you.

Helpline: **03000 030 555**

Monday to Friday, 9am-5pm

Ringing our helpline will cost the same as a local call.

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blf.org.uk/breathing-tests

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We value feedback on our information. To let us know your views, and for the most up to date version of this information and references, call the helpline or visit **blf.org.uk**