



Lung (VQ) scans

This information sheet explains about the lung scan and what to expect when your child comes to Great Ormond Street Hospital (GOSH) to have one.

What is a lung scan?

It is used to check how well your child's lungs are working. The scan works by injecting a substance called an isotope into your child's veins, which shows the blood supply to his or her lungs. Some children also breathe in a gas containing an isotope, which shows how well oxygen passes into the lungs to be absorbed by the body.

Are there any alternatives?

Various types of scan such as CT, ultrasound or x-rays can show the size and shape of your child's lungs but not how they are working. The results of the scan are then used to plan your child's treatment.

When you receive the appointment letter

If you are unable to keep this appointment, please inform the department at least two weeks beforehand. Sometimes, we can offer the appointment to another child on the waiting list. As so many children and young people need to use our services, we have had to introduce a policy where if a child cancels or does not attend two appointments in a row, we will close their referral and inform their GOSH consultant.

Before the appointment

If you are pregnant or think you could be pregnant, please let us know at least two days before your child is due to come to GOSH for the injection. There is a risk that the isotope could harm your unborn baby, so we advise you to organise another adult to help look after your child for the first 24 hours after the scan. If this is not possible, we may have to reschedule your appointment. If your daughter is 12 years old or older, we will ask her about her periods and any possibility that she could be pregnant. If your child is under four years old or has a medical condition that means it is difficult to lie still for two hours, it is likely that he or she will need to go to a ward early in the morning before the injection time. Your child will be given a medicine that will make him or her sleep during the scan. Some children go to a ward just to have the cannula inserted but will not need sedation. The ward will contact you about the time of admission and any special instructions. If you have not heard from the ward three days before the scan, please ring the Nuclear Medicine department.



The day of the scan

Please arrive at the Radiology (X-ray) reception desk at the time stated in your child's appointment letter. This is one hour before the injection is due to be given, so your child can have local anaesthetic cream applied. This will numb the skin so the needle does not hurt so much. If your child is apprehensive or scared of needles, please telephone us beforehand and discuss your concerns with our play specialist.

If your child does not want local anaesthetic cream or weighs less than 5kg, please arrive 15 minutes before the injection.

Your child will be able to watch a DVD during the scan, so please bring any favourites. It can also help if your child has a favourite toy to hold as well.

Your child will not need to get undressed for the scan. However, he or she should wear clothes containing as little metal, such as zips or buttons, as possible as this interferes with the scan.

The injection

Once the local anaesthetic cream has made your child's skin numb, we will ask you and your child to come to have the injection. Your child will need to get up onto the scanning bed for the injection and pictures. The radiographer or nurse will put a very small needle in your child's hand, arm or foot and inject the isotope. Immediately after the injection, he or she will remove the needle and put a plaster over the area.

The scan

You can stay with your child throughout the scan. He or she will need to lie very still on their back while a series of pictures are taken. The first picture lasts for about six minutes to look at how the blood vessels are distributed in your child's lungs. For the second picture we will ask your child to breathe through an oxygen mask or facemask for about three minutes to look at the air supply to their lungs. The gas

your child breathes has no taste or smell. This breathing part will only be required if it has been requested by your doctor.

We will then look at the blood vessels' distribution (and air supply, if required) to your child's lungs lying on their left side, then their right side and finally, lying on their front. So, to look at both the blood supply and air supply to your child's lungs, all eight pictures together should take about 45 minutes but we can have breaks between each position if your child finds it difficult to lie down for the whole scan.

At the end of the scan we will need to perform a quick chest x-ray on your child if they have not had one within the last 48 hours.

After the scan

If your child has had sedative medicine, he or she will return to the ward to wake up fully before you can all go home.

If your child is not having any further scans or tests, you will be free to go home. The radiographer will send a report about the scan to your child's doctor.

Are there any risks?

There are no side effects to the scan. The isotope that we inject and the gas that your child may need to breathe will not interfere with any medicines your child is taking. The isotopes for both the blood supply part and the breathing part contain a very small amount of radioactivity, similar to the amount we receive from natural background radiation in about six months. This is not a danger to your child as the isotopes become inactive in the hours following the scan. However, it is necessary to take some precautions for the first 24 hours after the scan, while the isotope is leaving your child's body. These are explained in the next section. There is a risk that the isotopes could harm an unborn baby, so please follow the instructions earlier in this leaflet to minimise these risks.



Going home

For the first 24 hours after the scan:

- Your child should drink plenty of fluids. This will allow the isotope to pass out through his or her body as quickly as possible.
- If your child is toilet-trained, he or she should go to the toilet as often as possible. Hand washing afterwards is very important.
- If your child is in nappies, you should change them frequently and dispose of the dirty nappy in an outside bin. Wash your hands thoroughly after nappy changing.
- If you are pregnant or think you could be pregnant, you should avoid contact with your child's bodily fluids, such as urine (wee), faeces (poo) and vomit.
- Your child should continue to take any medicines as usual. The isotope will not affect them in any way.

**If you have any questions,
please telephone the Radiology
department on 020 7405 9200 ext 5220**

Compiled by the Radiology department in collaboration with the Child and Family Information Group
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