

# Lung Scan

## What is a lung scan?

A lung scan is a test most often used to find a blood clot that is blocking normal blood flow to part of a lung (pulmonary embolism). Other common reasons for a lung scan are evaluating hypoplastic lung disease and CDH (congenital diaphragmatic hernia). Lung scans are also done to see how well the lungs are working.

Sometimes, we want to see how your child's lungs are working before your child has surgery. Two types of lung scans are usually done:

- **Ventilation scan** During a ventilation scan, your child will breathe in a radioactive tracer mist so it goes into their lungs. Pictures from this scan can show areas of the lungs that are not receiving enough air.
- **Perfusion scan** During a perfusion scan, we will inject a small amount of radioactive tracer into a vein in your child's arm. It travels through the bloodstream and into the lungs. Areas of your child's lungs that are not receiving enough blood show up as "cold" spots on the scan pictures.

If your child's lungs are working normally, blood flow on a perfusion scan matches air flow on a ventilation scan. A mismatch between the two scans may be a sign of a blood clot or other abnormality. We will study the pictures more to measure how well each lung is working on its own.

Ventilation and perfusion scans can be done separately or together to diagnose certain lung diseases. If both scans are done, the test is called

a V/Q scan. In this case, the ventilation scan is usually done first.

## How do I prepare my child for the scan?

Your child can eat and drink like normal before the lung scan.

Dress your child comfortably in clothes without zippers or metal snaps. Sweats are a good choice.

We have videos your child can watch, or they can bring their favorite video or DVD from home to watch during the exam.

## How do we check in for the appointment?

Arrive 20 minutes before your scheduled appointment. Being late can affect other appointments and can delay your appointment. If you will be late, please call Radiology at (206) 987-2133.

Check in at the 4<sup>th</sup> floor registration desk inside the Whale entrance. After you complete registration, you will be directed to the Radiology reception area.

## What happens during the scan?

A nuclear medicine technologist will do your child's lung scan. A radiologist will review the pictures from the scan. We do not usually use anesthesia for this scan.

During the scan, your child will lie on their back with the scanning camera above their chest.

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### Ventilation scan

For the ventilation scan, we will place a mask over your child's mouth and nose. They will breathe in the tracer (in the form of a mist) through the mask by taking deep breaths for 2 to 3 minutes. Once the mask is removed, we will begin taking pictures. Each picture will take several minutes. We will move the camera around your child to take pictures of different angles of their lungs.

This scan takes about 20 minutes.

### Perfusion scan

For the perfusion scan, the technologist cleans the site on your child's arm where the radioactive tracer will be injected. Then they inject a small amount of the tracer.

After the tracer is injected, the same series of pictures will be taken again. Your child will need to remain very still during the scans to avoid blurring the pictures.

This scan takes about 20 minutes.

### How does the scan feel?

Most children do not have any problem with the mask. However, your child may find that breathing through the mask during the ventilation scan is awkward, especially if your child is very short of breath. There will be plenty of oxygen coming through the mask the entire 2 to 3 minutes that the mask is on your child's face.

Your child may feel nothing at all from the needle puncture when the tracer is injected, or they may feel a brief sting or pinch as the needle goes through the skin. Otherwise, a lung scan is usually painless.

### Are there any risks with a lung scan?

Allergic reactions to the radioactive tracer are rare. Most of the tracer will leave your child's body (through urine or stool) within a day. The amount of radiation is so small that it is not a risk for people to come in contact with your child following the scan.

### How do we get the lung scan results?

The images from your child's test are reviewed within 24 hours and a report will be sent to the doctor who ordered the test. That doctor will contact you to talk about the results.

#### TO LEARN MORE

- Radiology (206) 987-2133
- Your Child's Health-Care Provider

*Children's will make this information available in alternate formats upon request. Please call Marketing Communications at (206) 987-5205.*

*This handout has been reviewed by clinical staff at Children's Hospital. However, your child's needs are unique. Before you act or rely upon this information, please talk with your child's health-care provider.*