Pulmonary Angiogram

What is a pulmonary angiogram?

An angiogram is a type of X-ray image of blood vessels. It's also called an arteriogram. It's done to look at blood vessels that have problems. A pulmonary angiogram is an X-ray of the blood vessels of the lungs.

The procedure is done with a special contrast dye injected into the body's blood vessels. This is done in the groin or arm. The dye shows up on X-rays. Fluoroscopy is often used during this test. This is like an X-ray movie. This lets your healthcare provider clearly see the vessels that send blood to and from the lungs in real time.

Why might I need a pulmonary angiogram?

A pulmonary angiogram may be used to:

- Look at the blood flow to the lungs before or after surgery
- Check for problems such as pulmonary hypertension
- Check for and treat a blood clot in the lungs
- Send medicine into the lungs to treat cancer or bleeding

A pulmonary angiogram can show:

- Blood clot (pulmonary embolism)
- Bulging blood vessel (aneurysm)
- An artery abnormally connected to a vein (arteriovenous malformation)
- Heart and blood vessel problems present at birth
- Foreign body in a blood vessel
- Narrowing of a blood vessel wall (stenosis)

CT angiography (CTA) of the chest is done more often than pulmonary angiogram because it's more accurate. A pulmonary angiogram is most often done when you are very likely to have a large blood clot. Treatment can be planned if it is found.

Your healthcare provider may have other reasons to advise a pulmonary angiogram.

What are the risks of a pulmonary angiogram?

All procedures have some risks. The risks of this procedure may include:

- Allergic reaction to the contrast dye
- Bleeding due to puncture of a blood vessel
- Injury to nerves
- Blood clot (embolus) traveling to the lungs
- An area of swelling due to buildup of blood (hematoma)
- Infection

- Kidney damage
- Respiratory failure
- Heart attack or abnormal heart rhythm
- Stroke

Another risk is radiation exposure. Fluoroscopy uses much more radiation than single X-rays. Talk with your healthcare provider about the amount of radiation used during the procedure and the risks to you. Tests that use radiation increase a person's risk of cancer in the future.

Your risks may vary depending on your general health and other factors. Ask your healthcare provider which risks apply most to you. Talk with them about any concerns you have.

How do I get ready for a pulmonary angiogram?

Your healthcare provider will explain the procedure to you. Ask them any questions you have. You will be asked to sign a consent form that gives permission to do the procedure. Read the form carefully. Ask questions if anything is not clear.

Tell your healthcare provider if you:

- Are pregnant or think you may be pregnant
- Are allergic to contrast dye or iodine
- Have kidney failure or other kidney problems
- Are sensitive to or allergic to any medicines, latex, tape, or anesthetic medicines (local and general)
- Take any medicines, including prescriptions, over-the-counter medicines, vitamins, and herbal supplements
- Have had a bleeding disorder
- Take blood-thinning medicine (anticoagulant), aspirin, or other medicines that affect blood clotting

Make sure to:

- Stop taking certain medicines before the procedure if advised by your healthcare provider.
- Follow any directions you are given for not eating or drinking before the procedure
- Plan to have someone drive you home from the hospital
- Follow any other instructions your healthcare provider gives you

You may have a blood test before the procedure. This is done to see how long it takes your blood to clot. Your healthcare provider will tell you more. You may also have other kinds of blood tests.

What happens during a pulmonary angiogram?

You may have your procedure as an outpatient. This means you go home the same day. Or it may be done as part of a longer stay in the hospital. The way the procedure is done may vary. It depends on your condition and your healthcare provider's methods. You may be given a mild sedative to help you relax before the test starts. In most cases, the procedure will follow this process:

1. You will be asked to remove your clothes. If so, you will be given a hospital gown to wear. You may be asked to remove jewelry or other objects.
2. You'll need to empty your bladder before the procedure.
3. You will lie on your back on the X-ray table.

4. An IV (intravenous) line will be put in your arm or hand.
5. Medical staff will put small sticky pads (electrodes) on your chest. They will connect with wires to a machine (ECG or electrocardiogram) that records the electrical activity of your heart. Your heart rate, blood pressure, and breathing will be watched during the procedure.
6. Medical staff may trim the hair at the site where a thin, flexible tube (catheter) will be inserted in the groin or arm. The skin will be cleaned. A numbing medicine (local anesthetic) will be injected into the area.
7. Medical staff will put the catheter in the groin or arm. They will gently guide the catheter through the vein to the right side of the heart. The radiologist may use fluoroscopy during this process to help get the catheter to the right place.
8. They will inject contrast dye into your IV line. You may feel some effects when this is done. These effects may include a flushing sensation, a salty or metallic taste in the mouth, a brief headache, nausea, or vomiting. These effects often last for a few moments. Tell the radiologist if you feel any trouble breathing, sweating, numbness, or heart palpitations.
9. After the contrast dye is injected, the radiologist will take a series of X-ray images. In some cases, more contrast dye may be injected and more X-ray images taken.
10. The groin or arm catheter will be removed. Staff will put pressure on the area to stop bleeding.
11. They will put a dressing on the site. They may put a small, soft weight over the site for a period of time. This is to prevent more bleeding or a hematoma at the site.

What happens after a pulmonary angiogram?

After the procedure, you'll lie flat in a recovery room for 1 to 2 hours. Your blood pressure, pulse, and breathing will be watched. The groin or arm puncture site will be checked for bleeding. You will need to keep your leg or arm straight. You will be given pain medicine if needed. You may be able to go home the same day. Or you may need to stay overnight. When it's time to go home, you'll need to have someone drive you.

At home, you can go back to your normal diet and activities as advised by your healthcare provider. Drink plenty of water. This is to help flush the contrast dye from your body. Don't do strenuous physical activity for a few days. Don't take a hot bath or shower for a day or two.

Check the puncture site in your groin or arm several times a day. Check for bleeding, pain, swelling, change in color, or change in temperature. A small bruise is normal. A small amount of blood is also normal.

Call your healthcare provider if you have any of the below:

- Fever of 100.4°F (38°C) or higher, or as advised by your healthcare provider
- Chills
- Redness or swelling of the groin or arm site
- A lot of blood at the groin or arm site
- Pain, coolness, numbness, tingling, or loss of function in your arm or leg

Your healthcare provider may give you other instructions after the procedure.

Next steps

Before you agree to the test or the procedure make sure you know:

- The name of the test or procedure
- The reason you are having the test or procedure
- What results to expect and what they mean

- The risks and benefits of the test or procedure
- What the possible side effects or complications are
- When and where you are to have the test or procedure
- Who will do the test or procedure and what that person’s qualifications are
- What would happen if you did not have the test or procedure
- Any alternative tests or procedures to think about
- When and how you will get the results
- Who to call after the test or procedure if you have questions or problems
- How much you will have to pay for the test or procedure