

Computerised Tomography Pulmonary Angiography (CTPA)

Radiology Department



Patient information leaflet

This leaflet tells you about having a CT Pulmonary Angiography (CTPA) scan. If you have any questions about the procedure, please ask the consultant who has referred you for the test or the department which is going to perform it.

The Radiology Department

The radiology department may also be called the X-ray or imaging department. It is the location in the hospital where radiological examinations of patients are carried out, using a range of equipment.

Who does what?

Appointment clerks will help you to make or change appointments.

Radiographers will perform the test. They will be able to answer some of your questions but will not be able to give you the results of your test. They ensure the images taken are of high quality for a Radiologist to provide a written report for your doctor.

Radiologists are specialist doctors who will interpret the images and report the scan for your consultant.

What is a CT scan?

Computerised Tomography (CT) is a special type of X-ray that uses a computer to create cross sectional (or slice-like) images of the body. The CT scanner is a large square machine which produces X-rays. Many people liken the machine to a polo mint.

Does CT involve radiation?

Yes, but your doctor will have considered possible risks and decided that the benefits to you outweigh any risk from the examination. If you have any queries about the need for this test or other alternative tests please contact your referring clinician.

The amount of radiation used during a CT scan is more than an ordinary X-ray of the chest or body, but provides a great deal more information than an ordinary X-ray as it acquires very detailed images.

Many CT examinations involve you having an iodine-based contrast medium (commonly called dye), injected into a vein to increase the quality of information obtained from the scan.

This dye is filtered from your blood stream by your kidneys. Your referring clinician may arrange for you to have a blood test prior to your scan to check your kidney function (if you have not already had one in the previous three months).

What is CT Pulmonary Angiography (CTPA)?

Angiography is a diagnostic test to produce images of blood vessels in the body. A CTPA scan visualises the pulmonary arteries - blood vessels from the heart to the lungs and is specifically for identifying any blockages in these vessels. It also provides information on other tissues in the chest.

The dye is used to highlight the blood vessels. This is injected through a cannula placed into a vein of the arm/hand. The images are acquired while the contrast flows through the pulmonary blood vessels, so they are highlighted on the images.

After scanning, the images will be processed using a special computer and software and reviewed in different planes and projections by the radiologist.

What preparation is required?

You will be given a gown to wear during the scan. Metal objects, such as necklaces and bra fastenings, may affect the CT images and should be removed prior to the examination while you are changing.

Unless you have been told otherwise, you may eat and drink normally before and after the scan.

Women of childbearing age

This examination is not suitable for pregnant women, or women who are breastfeeding. If you are unsure whether you may be pregnant, please contact the CT department before attending for your appointment.

Can I bring a relative or friend?

Yes, but for reasons of safety they will not be able to accompany you into the examination room, except in very special circumstances.

Please contact the CT department if you are diabetic, taking any blood thinning drugs, have renal impairment, or if you know that you are allergic to X-ray dye (iodine). If you are asthmatic, please bring your inhaler or asthma medication with you to your appointment.

What happens when I arrive?

Please go to the reception desk to book in for your appointment. You will be given some labels and directed to the CT scanning waiting area. If there is a volunteer on duty they will take your labels, show you where to change and provide you with a gown. If there is no volunteer on duty the radiographers will be aware of your arrival and will come out to greet you in a short while.

If you need to change for your procedure you will be given a basket for your clothes and personal belongings. You may bring your belongings with you into the scanning room.

What will happen during the scan?

You will be taken into the CT scanning room where your identity will be checked. The radiographer will explain the procedure to you and answer any questions you might have. They will check some other details with you such as any allergies you might have. Your consent will be gained for the examination and you will be asked to lie down on the couch.

A cannula will be placed into a vein in your arm, and through this you will receive two injections of the dye, which is introduced through the cannula using an automatic injector. The injector is operated by the radiographers in the control room.

The couch will be moved slowly to position your chest within the 'polo mint'. The radiographers will retire to the control room but they are able to hear you talk over the intercom and they will be able to see you throughout the scan.

With modern CT scanners, you will only hear slight buzzing, clicking and whirring sounds as the machine acquires images. During the scan, the couch will move in and out of the machine a few times.

You will be asked to breathe in then breathe out and stop breathing for a short time as the couch moves out of the scanner. The breath hold is typically around 7 seconds.

The radiographers will tell you over the speaker before you receive the injection. When the dye is introduced into the bloodstream during the procedure, it clearly defines the pulmonary blood vessels, making them appear bright white on the images.

When the dye is injected it is common to experience a 'hot flush' sensation, particularly across the neck and chest. This feeling goes away quite quickly and is normal. Many people experience the hot sensation around the rest of the body. Some people also get a metallic taste in their mouth. As the CTPA examination requires two injections of dye, you may experience these sensations twice.

Once the scanning is complete, you will be asked to wait in the department while the scan is checked. If any blockages are identified, you may be referred for treatment.

Will the scan be uncomfortable?

You will need to lie on your back for the scan. The radiographers will endeavour to make you comfortable for the short time that you are on the couch. You will be asked to bring your hands up above your head for the scan as this results in clearer images. Most people find that the process of scanning is not uncomfortable.

How long will the procedure take?

The scanning process will take up to twenty minutes. Sometimes there may be a delay in the department due to emergency cases which may result in you being seen later than your appointment time. We try to keep patients informed of any delays when we can.

Are there any side effects?

In rare cases, some people may have an allergic reaction to the dye. Most reactions are mild; radiographers are trained to recognise the signs of a reaction and to look after you. Doctors are also available should you start to feel more unwell.

A reaction may involve feelings of intense hot flushing, nausea, developing a rash or becoming breathless or wheezy. Severe reactions to the dye are extremely rare.

Following the scan, you can eat and drink normally. The injection will not affect your ability to drive.

What are the benefits vs. the risks?

Benefits

- This scan can identify narrowing or obstruction of the blood vessels in the chest, allowing for treatment to take place to address the problem
- The scan is quick, minimally invasive and provides a lot of information on everything in the chest as well as the pulmonary vessels
- You will find out straight away if treatment is necessary, allowing for problems to be addressed swiftly

Risks

Most patients will experience no adverse effects during or after the scan.

- It is not advisable for patients with impaired renal function to undergo this procedure as the injection of the dye can put additional strain on the kidneys
- On rare occasions, it is possible for the dye to leak out of the vein into the surrounding tissues. If a large amount leaks out it may cause discomfort and damage to the tissues. If this does occur, the radiographer will treat the area if necessary and advise you on any aftercare
- There is an extremely small chance that you might have an allergic reaction to the injection
- The use of radiation is a risk which has been considered by your referring clinician. The benefits of diagnosing possible blockages in the vessels supplying the lungs far outweigh any of the risks of the use of radiation

As with all radiographic examinations, the amount of exposure to radiation is kept to an absolute minimum.

Is there an alternative examination?

No. There is no other minimally invasive examination that will give the same detailed information about the blood vessels and other structures in the chest cavity.

When will I get the results?

The scan will be checked for any blockages in vessels while you wait in the department. The scan will be formally reported after your visit and the findings sent to your referring consultant. If you already have a clinic appointment time for the results, please inform the radiographer.

Privacy and dignity

We promise to do everything we can to make you as comfortable as possible during your visit to the department. We hope that the information in this leaflet will answer any questions you may have but please feel free to contact us if you have any particular worries, questions or concerns.

Patient surveys

We value your opinion on our service and in order to deliver, maintain and improve our service we ask you to complete a short patient questionnaire survey found with your appointment letter. Completion of these surveys is entirely voluntary.

Following the examination, if you experience any problems please contact the CT department between **08:30** and **17:00**.

Outside these times please contact your GP.

Further information

For further information about Diagnostic Imaging Services at Royal Surrey County Hospital NHS Foundation Trust, please contact:

Royal Surrey County Hospital NHS Foundation Trust

Egerton Road
Guildford
Surrey
GU2 7XX

www.royalsurrey.nhs.uk

Reference source

- The College of Radiologists

Useful websites

- **NHS Choices:**
www.nhs.uk/conditions/pulmonary-embolism/
- **Radiation Dose:**
www.gov.uk/government/publications/ionising-radiation-dose-comparisons/ionising-radiation-dose-comparisons
- **NHS Choices:**
www.nhs.uk/Conditions/ct-scan/Pages/Introduction.aspx

Contact details

If you have any questions or would like to know more about this procedure, please telephone the CT department:

Telephone: 01483 464151 (Direct line)

Telephone: 01483 571122 **ext** 4151 / 4414

If you are unable to keep your appointment notify the CT Scanning department as soon as possible.

PALS and Advocacy contact details

Contact details of independent advocacy services can be provided by our Patient Advice and Liaison Service (PALS) who are located on the right hand side as you enter the main reception area. PALS are also your first point of contact for health related issues, questions or concerns surrounding RSCH patient services.

Telephone: 01483 402757

Email: rsc-tr.pals@nhs.net

Opening hours: 9.00am–3.00pm, Monday to Friday

If you would like information documents in large print, on tape or in another language or form please contact PALS.

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