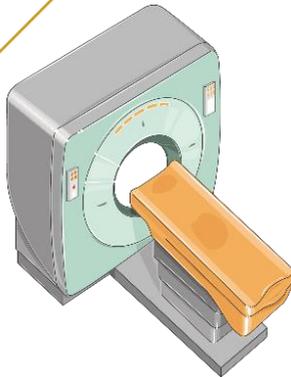




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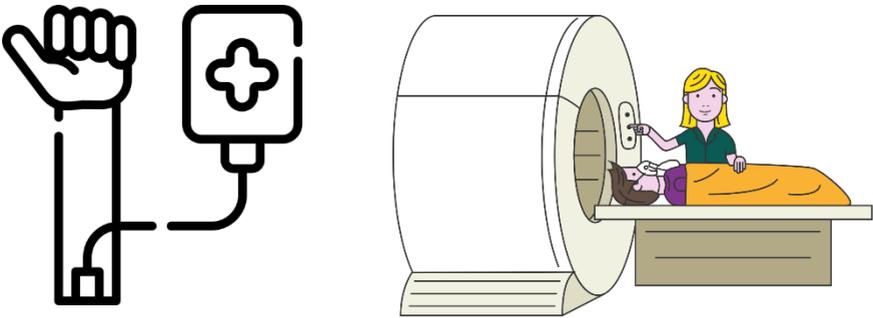
مستشفى الملك فهد الجامعي
King Fahad Hospital The University

CT Scan of the Brain and Blood Vessels



What is a CT angiogram?

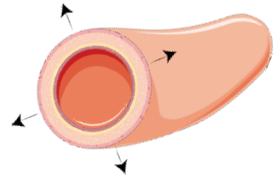
A computerized tomography (CTA) scan is performed after an injection of a contrast material or dye into a blood vessel. CT scan helps to diagnose and evaluate vascular disease, such as an aneurysm or blockage. It is usually done in a radiology department or an outpatient imaging center.



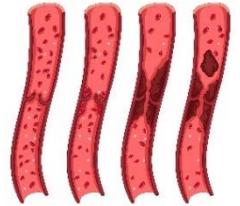
What are the uses of CT angiography?

Evaluation of many vascular diseases such as:

- Aneurysm



- Blockage of blood vessels

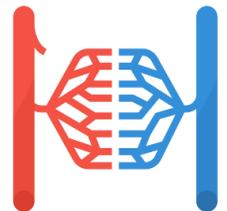


- Blood clots

- Birth defects



- Disorganized blood vessels, such as vascular anomalies



What are the uses of CT angiography?

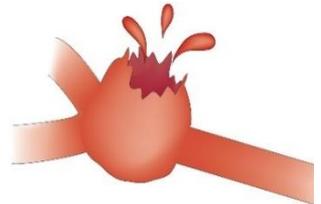
- Injuries



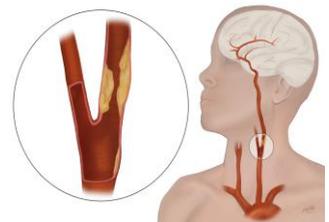
- Tumors



- Rupture of blood vessels



- Detecting arteriosclerosis (plaque) in the carotid artery of the neck, which may restrict blood flow to the brain and cause a stroke.



What is perfusion using a computerized tomography for the head?

A computerized tomography (CTP) perfusion of the head uses special X-ray devices to show which areas of the brain are being adequately supplied with blood (perfusion) and shows detailed information about the blood flow to the brain. The CT perfusion is fast, painless, noninvasive, and accurate. It is a useful technique for measuring blood flow to the brain that may be necessary for the diagnosis and follow-up of stroke and vascular disease treatment.

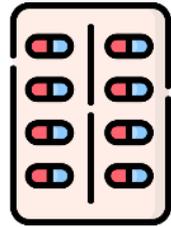


What are the uses of CTP perfusion?

- Detection of acute stroke.



- Patients' selection for blood thinners therapies after stroke through identifying brain tissue exposed to risk of infarction or permanent injury due to insufficient blood supply.



- Evaluation of patients who are nominated for surgical or neurovascular treatments.



What are the uses of CTP?

- Evaluation of vasospasm risk, which is a sudden constriction of blood vessels that may arise because of bleeding under the arachnoid membranes.



- Diagnosis and evaluation of treatment response among patients with a variety of brain tumors.



How do I prepare myself for imaging?

You should wear comfortable, loose-fitting clothes fit the examination. You may need to wear a gown during the scan. Metal objects, including jewelry, glasses, dental prostheses, and hairpins may affect the CT images.

Leave it at home or take it out before the process. You may also be required to remove hearing aids and remove unstable dental prostheses.

Women will be required to remove bras that have metallic wires. You may be asked to remove any metal in body piercings if possible.



How do I prepare myself?

You will be asked not to eat or drink anything for a few hours before the scan, if a contrast agent is to be used in the test, you must **inform your doctor** with all medications you are taking, or if you have any allergies. If you have a known **allergy** to a contrast agent, your doctor may prescribe medications to reduce the risk of the allergic reaction.



How do I prepare myself for imaging?

Also **tell your doctor** about any recent illnesses or other medical conditions and whether you have a history of heart disease, asthma, diabetes, or kidney or thyroid disease. Any of these diseases may increase the likelihood of complications during or after the scan.



How do I prepare myself for imaging?

Women should always inform the doctor and CT technologist if there is a possibility of pregnancy: If you are breastfeeding, ask your doctor how to proceed. It is preferable to pump breast milk early and keep it for use until the colorants disappear (about 24 hours after the scan).



What are the steps for the examination?

1- You will lie on a bed or a table transmits through the CT scanner to enable the X-ray beams examine different areas of the body, then the computer will take the information gathered from the scanner to show pictures of the body.



What are the steps for the examination?

2- The computer processes a large amount of CT scan data to create two or three 3D images of the body. You may be asked to hold your breath during the examination. Any movement, including breathing and body movements, can blur the images. A single scan takes about one to two minutes, but multiple scans may be required.



What are the steps for the examination?

3- The radiologist will analyze these images using advanced computer programs and high-quality screens to detect diseases in the body. Sometimes **anesthesia is required for babies** to keep them still during scanning. Your doctor will help you determine if sedation is needed, and if so, this will be arranged. When the scan is complete, you will **be asked to wait for the technician to verify that the images are of high enough quality for accurate reading.**



After completing the scan:

The technician will remove the intravenous syringe used to inject the contrast material.

The small needle hole will be covered. You can return to your normal life.



Who reads the results and how can the patient get them?

A radiologist, a doctor trained in supervising and reading x-ray exams, will analyze your images to make a diagnosis. The radiologist will send a signed report to the primary care or physician in charge, who will share the results with the patient.



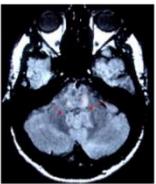
What are the benefits of the CT SCAN?



It may cancel the surgical procedure. If still surgery is necessary, it may be performed accurately.



CT scanning is fast, noninvasive and may have much fewer complications compared to traditional interventional angiography



CT angiography provides more accurate anatomical details than other angiography tests such as conventional catheter angiography and magnetic resonance imaging

What are the benefits of the CT SCAN?



Anesthesia is often not needed.



Its financial cost is also lower than angioplasty



There are no radiation in the patient's body after the CT scan.

X-rays used in the CT scan should not have any immediate side effects



What are the potential risks of a CT scan?

- Most patients complete CT angiography without any negative side effects.



- There is a small chance of developing cancer from excessive exposure to radiation, however, the benefit of an accurate diagnosis far outweighs the risks.



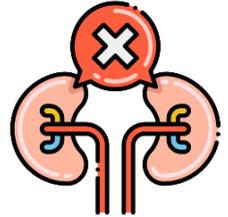
- If you have a history of **allergy** to the contrast agent used with x-rays, your doctor may recommend special preventive medications.





What are the potential risks of a CT scan?

- Patients at risk of **kidney failure** and who already have impaired kidney function, an iodine injection with a contrast agent may further damage kidney function. Consult your healthcare professional and radiologist for more information about this risk.



- A woman should always tell the radiologist if there is a possibility of pregnancy.





Wat are the potential risks of a CT scan?

- If a large amount of X-ray contrast material leaks out of the injected vein and spreads under the skin, it can damage the skin, blood vessels, and nerves.



If you feel any pain or a tingling sensation during or immediately after injection of the contrast material, you should tell the nurse technician immediately.





Wat are the potential risks of a CT scan?

- The risk of severe allergic reactions to iodine-containing contrast materials is rare, and hospitals are well-equipped to handle it



- Special care is taken during the X-ray examination to use the lowest possible radiation dose while producing the best images for evaluation. National and international organizations for radiation protection review and update the technology standards used by radiologists



Review and audit:

The content of this booklet has been reviewed by
consultants of the Neurology department at King Fahad
University Hospital

Health awareness Unit

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IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

مستشفى الملك فهد الجامعي
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