

Coronary CT scanning

(And PET myocardial perfusion imaging if needed)

A computed tomography (CT) scanner uses X-rays to take cross-sectional images, or image 'slices'. For this reason, the study is not suitable for pregnant women.

Some patients who have had a coronary CT scan will undergo PET myocardial perfusion imaging at the same visit. This is a type of PET scan (positron emission tomography) that examines blood flow to the heart muscle. The PET scan will be done if there are findings on the CT scan that need to be investigated further.

The PET/CT scanner has a wide opening (70 cm in diameter), so it can generally be used even for claustrophobic patients. The scanning visit takes about 1,5-3 hours including the preliminary steps (depending on the need for further scan).

How to prepare

The scan is done with a contrast agent, so a laboratory test to check kidney function (**plasma creatinine**) needs to be completed beforehand. If you know you have kidney failure, please contact the facility referring you to the study.

After the CT scan, the study may be continued with a PET scan. Please note the following instructions for this:

- Do not drink **coffee, tea, cocoa, cola or energy drinks for 24 hours** before the study and do not eat **dark chocolate** (starting from the morning of the day before the study. Otherwise you may eat normally.
- **Do not smoke for 6 hours** before your appointment (this also applies to other nicotine products).
- Avoid physical exertion on the day of the examination and the night before

NOTE: The PET scan cannot be done if you have had coffee, tea, cocoa, cola or energy drinks!

If you are allergic to X-ray contrast agent, please tell this to the referring doctor and please contact the X-ray department before the day of the examination. Pregnant women do not have this procedure. If you think you may be pregnant, notify the PET Centre before you come in for the study.

Medications

Metformin-medication does not need to be stopped before the procedure. **Dipyridamole medication** (e.g. Persantin, Orisantin) must be suspended for **two days before the study**. A break of 2-3 days should be taken when using **long-acting methylxanthines** (eg Aminoccont, Retaphylline). You may take your other medications as usual.

The study generally involves using nitrate to expand the coronary arteries and a beta blocker to slow the heart rate, so bring along information about the medications you use.

What to expect at your appointment

Every patient is asked to complete an interview form. The scanning procedure will be reviewed with you in advance and a medical technician will help you practice holding your breath for a short time as required for the study.

- You will have an ECG monitor and a cannula (drip) in your forearm vein
- The physician who is conducting the study will give you a beta blocker as needed to slow your heart rate. A nitro spray that dilates the coronary arteries is also given just before the scan.
- Your heart will be scanned without a contrast agent first, and then with contrast injection. You will need to stay still and follow any instructions you are given for the study to be successful. The radiologic technologist and the physician who is conducting the study will be able to see you and hear you throughout the study.
- The radiographic contrast agent contains iodine and may cause a warm feeling to spread over your body for a moment, and you may also notice a metallic taste in your mouth. This is normal, not an allergic symptom.
- If there are findings from the contrast scan that need to be investigated further, a PET scan will be done afterwards. This scan uses a drug (adenosine) that increases blood flow to the heart muscle, making it possible to determine how the heart is affected by any coronary artery narrowing that was seen on the CT scan.
- You may feel some chest discomfort or pressure while receiving the adenosine, but it will go away as soon as the drug has been administered. The doctor will monitor your heart tracing and blood pressure continuously during the scan.

After the study

We recommend drinking more water than usual after the study. This is because the contrast agent is excreted through the kidneys into the bladder and leaves your body in urine, usually without causing side effects. However, if you notice feeling something out of the ordinary, contact the scanning facility or an emergency doctor. Small amounts of iodine-containing contrast agents are excreted into breast milk, but absorbed only minimally from the digestive tract, so there is no need to pause breast-feeding. The study results will be provided by a doctor at the ward or outpatient clinic that referred you.