

# CT - TAVI (Transcatheter Aortic Valve Implantation)

## What is a CT scan?

Computed Tomography (CT) is a fast, effective and accurate way of using x-rays to take pictures in very fine slices through the part of the body that the doctor has asked to be investigated.

CT scanners can produce multiple slices of the body in one single rotation and the CT computer is able to stack these slices together to create images in multiple planes. With all of these different slices and 3D reconstructions, the radiologist will have a very detailed picture of the structures making up your body. This will help them to make a diagnosis so that the right treatment can be planned as soon as possible.

## What preparation is required?

**A CT TAVI examination will require you to have an iodinated contrast injection and therefore requires you to fast for two hours prior to the examination.** You can take medications with water during this period if necessary.

Patients who have poor kidney function (renal impairment) or are taking Metformin for diabetes must have had a recent blood test, the results of which will help the radiologist to determine if x-ray contrast can be given. If you have any queries regarding this please contact using the number below.

## What is involved?

CT Angiography (CTA) of the aortic root in preparation for insertion of a TAVI (Transcatheter Aortic Valve Implantation) is a minimally invasive investigation, only requiring the insertion of an IV cannula in your arm for the administration of the contrast injection during the scan.

A CT TAVI imaging examination is always done before a TAVI procedure. A TAVI is a medical procedure performed to replace an aortic valve that has been damaged by high levels of calcification that often occurs over time with age. This results in a condition known as aortic stenosis and patients often present with fatigue, shortness of breath, a high or irregular heart rate and sometimes chest pain. During a TAVI procedure an artificial valve made of natural animal heart tissue will be implanted into the heart via a catheter.

The CT TAVI examination usually takes about 15 - 20 minutes. It is a study undertaken to primarily assess and measure the anatomical dimensions of the native aortic root. These measurements are placed against a sizing guide so that the most suitable type and size TAVI implant can be purchased by the interventional

cardiology team in preparation for your procedure. The CT TAVI examination will also be used to assess the chest, lungs, aorta and arteries in the legs. This is to ensure there is a clear pathway for the insertion devices to be delivered to the heart.

The CT scanner acquires images at an extremely fast rate in order to obtain motionless pictures of the aortic valve; this is the valve that controls direction and flow of blood leaving the main pumping chamber of the heart. An injection of contrast is given at the same time the images are acquired to better visualise the aortic valve and aorta.

You will be asked to lie down on the CT table, ECG dots will be placed on your chest to check your heart rhythm. Pre contrast images are first obtained of the heart. The CT table will move in and out of the CT scanner and a series of pictures will be performed.

It is very important that you lie still for this test and hold your breath when requested. Any movement can blur the images, similar to when a moving object blurs a photograph and the test may need to be repeated. The injection of contrast is then given and the final imaging performed.

CT images of the aortic valve and aorta are taken in two separate but successive scans. The radiographer will go through with you the important breath-hold instructions that you will need to perform during the examination. The time needed to hold your breath may be slightly longer for a CT TAVI examination than other more commonly performed CT examinations (25 - 30 seconds). If you have any questions, please ask the radiographer at the time of your examination.

## What is an iodinated contrast injection?

The administration of an iodinated contrast injection during a CT scan can give significantly more information by highlighting blood vessels. This helps the radiologist provide a more comprehensive diagnosis.

If contrast is required for your test you will be asked to complete a questionnaire to assess your suitability. The contrast will only be given once your consent has been obtained and information will be provided detailing the benefits and risks.

The contrast is injected through a small cannula (plastic tube) inserted into a vein in your arm. This cannula remains in position for 10 minutes after your test has been completed.

### Are there any side effects?

If you have an injection of iodinated contrast, you may experience a sensation of warmth and a strange taste. These usually go away within a few minutes. In rare cases, some people may be allergic to the iodinated contrast.

If you have any concerns, please contact the department and speak with one of our staff.

### How long will my scan take?

Depending on the scans required it takes 15 - 20 minutes.

### How do I get my results?

Digital images are immediately available to your doctor and your records will be kept permanently. This occurs through a system called PACS. **If a priority report is requested it will be issued within two hours and faxed or emailed to your doctor, however this can sometimes take up to 24 hours.**

If your referring doctor wants to see you on the day of your examination, please advise the reception staff when you arrive for your appointment, so the appropriate information can be made available for you to take to your doctor.

### How much will this cost?

Please discuss this with the receptionist in Cabrini Medical Imaging at the time of booking your procedure.

### Important

**It is important to let us know when you make your booking if you are or think you may be pregnant or are breastfeeding.**

It is important to bring with you your referral, previous x-rays and any other tests (only if previous ones were **not** done at Cabrini or I-MED).

### Questions

For more information or to make an appointment, please contact Cabrini Medical Imaging using the number below.