

How do you prepare for CT scan?

Depending on which part of your body is being scanned, you may be asked to:

- ▶ Take off some or all of your clothing and wear a hospital gown
- ▶ Remove metal objects, such as a belt, jewellery, dentures and eyeglasses, which might interfere with image results
- ▶ Refrain from eating or drinking (anything except water) for 4-6 hours before your scan in case of contrast CT

What to expect during a CT procedure?

- ▶ During a CT procedure, you lie very still on a table, and the table passes slowly through the centre of a large doughnut-shaped x-ray machine.
- ▶ You might hear whirring or buzzing sounds during the procedure.
- ▶ At times during the procedure, you may be asked to hold your breath to prevent blurring of images.
- ▶ A contrast (imaging) agent, or dye may be used to highlight specific areas in some cases to get clearer pictures. It may be given by mouth, injected into a vein, given by enema, or given in all three ways before the procedure.

Mammography

Mammography is a non-invasive, low-dose x-ray procedure of the breast that is used for early screening and diagnosis of breast cancer in women. The images produced are called mammograms. These images may show small tumours that cannot be felt. Mammograms may also show other irregularities in the breast.

Note : Indicated in females above 35 years age

What to expect during mammography?

You will be asked to change your clothes, relax and take a deep breath as the procedure begins. You will stand in front of the mammography machine and place 1 of your breasts between 2 parallel plates. The plates will be pressed together to flatten your breast and the x-ray will be taken, which lasts a few seconds.

Tips to prepare for mammography

- ▶ Schedule your mammogram when your breasts are not tender or swollen to help reduce discomfort and get good pictures. Try to avoid the week just before your period and during your period.
- ▶ On the day of the exam, don't wear deodorant, perfume, lotion, or powder. They may show up on the x-ray as white spots.
- ▶ You might feel some discomfort when your breasts are compressed, and for some women it can be painful. Tell the technologist if it hurts.

Book an Appointment

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Radiology and imaging plays a vital role in determining the diagnosis and subsequent planning of treatment. It helps clinicians and surgeons immensely to plan all aspects of treatment and surgery in advance. The radiodiagnosis of many diseases at an early stage can be greatly beneficial for the patient.

Magnetic Resonance Imaging (MRI)

MRI is a non-invasive, painless imaging technology that produces three dimensional detailed anatomical images. It uses a powerful magnetic field, radiofrequency waves and a computer to produce detailed pictures of the inside of your body and is often used for diagnosis and treatment monitoring in any part of the body.

Contraindication for MRI

Absolute - Cardiac pacemaker, cochlear implant, aneurysm clips, shrapnel or bullet injury

Relative - Pieces of metal or electronic devices in body, such as metal artificial joint, metal implants

What to expect during MRI procedure?

- ▶ You will be asked to wear a gown and remove all jewellery.
- ▶ You lie on a flat bed that's moved into the scanner having a large magnet and asked to remain very still during the imaging process so that the image does not blur. You may also be asked to hold your breath at times while recording images.
- ▶ Contrast agents may be given intravenously before or during the MRI for better evaluation of some pathologies. Eg: infection or tumour.

- ▶ You can use earplugs or headphones to block out the loud noises of the scanner.

Ultrasonography (USG)

Ultrasonography is a painless, non-invasive, safe, and relatively inexpensive procedure that uses high-frequency sound (ultrasound) waves to produce images of internal organs and other tissues.

Indications of USG

- ▶ To image internal organs in the abdomen, pelvis, and chest - like heart, blood vessels, gall bladder, liver, spleen, pancreas, urinary tract, female reproductive organs
- ▶ To show the motion of organs and structures in the body in real time (as in a movie) - like motion of the beating heart in a foetus
- ▶ To check for growths and foreign objects that are close to the body's surface
- ▶ To guide doctors when they take a sample of tissue for a biopsy

Doppler ultrasonography

Doppler ultrasonography uses changes that occur in the frequency of sound waves when they are reflected from a moving object (called the Doppler effect) - red blood cells in case of medical imaging. It is used to detect blocked or narrowed blood vessels and to evaluate the functioning of heart.

Spectral Doppler ultrasonography

This procedure shows blood flow information as a graph. It measures velocity of blood flow in graph.

Colour Doppler ultrasonography

It is generally used to assess the risk of stroke and blood flow to internal organs and in tumours. For this

test, colour is superimposed on the shades-of-grey image of blood flow produced by Doppler ultrasonography. The colour indicates direction of blood flow.

Computed Tomography (CT) Scan

CT is a non-invasive, fast, painless, and accurate diagnostic imaging test used to create detailed images of internal organs, bones, soft tissue, and blood vessels.

The cross-sectional images generated during a CT scan can be reformatted in multiple planes, and can even generate three-dimensional images which can be viewed on a computer monitor, printed on film, or transferred to electronic media.

Indications for CT scan

- ▶ Diagnose infections, muscle disorders, and bone fractures
- ▶ Pinpoint the location of masses and tumours (including cancer)
- ▶ Study blood vessels and other internal structures
- ▶ Assess extent of internal injuries and internal bleeding
- ▶ Guide procedures, such as surgeries and biopsies
- ▶ Monitor effectiveness of treatments for certain medical conditions, including cancer and heart disease

Contraindications for CT scan

- ▶ Pregnancy
- ▶ Allergy in case of contrast CT
- ▶ Contraindications of intravenous contrast media (Non-contrast CT can be considered)