CT - Computed Tomography

What is a CT scan?
CT scanning – sometimes called CAT scanning - is short for Computerized Tomography and uses specialized x-ray equipment and sophisticated computers to create images of the inside of the body. CT scans provide clearer and more detailed images than regular x-ray exams. Many images or “sections” make up the complete exam. Radiologists then use their expertise and specialized computer monitors to diagnose medical conditions such as infectious disease, trauma, appendicitis, cancer, musculoskeletal disorders and cardiovascular disease.

How should I prepare?
You should wear loose fitting, comfortable clothing without metal. Metallic items such as jewelry or hairpins can degrade your CT images and should be left at home or removed prior to your exam. You may also be asked to remove hearing aids, glasses, or removable dental work. Unless instructed not to do so, take your normally prescribed medication the day of the scan. You may be asked not to eat or drink anything for several hours beforehand, especially if contrast material will be used in your exam.

In order for us to do the best possible exam for you, please let our technologist staff know if:
- You are pregnant or may be pregnant
- You are diabetic
- Have a history of kidney disease
- Have allergies to any foods, medications, or contrast material

If you have had a CT scan somewhere else, please let our technologist staff know about it or bring it with you if possible.

What does the equipment look like?
The CT scanner is typically a large, box like machine with a hole, or short tunnel, in the center. You will lie on a narrow examination table that slides into and out of this tunnel. Rotating around you, the x-ray source tube and x-ray detectors are located opposite each other in a ring called a gantry. The computer workstation that processes the imaging information is located in a separate room, where the technologist operates the scanner and monitors your examination.

How will my CT scan be done?
Your technologist will help you to lie flat on the table of the CT scanner and position you correctly. The table will then be moved so that the body part being examined lies in the center of the scanner ring. You will be able to see out of both ends of the scanner. The technologist will be able to see, hear and speak with you at all times via an intercom.

During a CT scan, the x-ray source and a set of electronic x-ray detectors rotate around the patient. The source sends out x-rays which are recorded by the detectors opposite the source. At the same time, the examination table moves through the scanner, so that the x-ray beam follows a spiral path. A special computer program processes this large volume of data to create two-dimensional cross-sectional images of the body, which are then displayed on a monitor. This technique is called helical or spiral CT.

It is very important to hold as still as possible during the scan and your technologist might ask you to hold your breath for a few seconds. Any motion, such as breathing or body movements, can lead to artifacts on your images. This is similar to the blurring seen on a photograph taken of a moving object.
CT imaging is sometimes compared to looking into a loaf of bread by cutting the loaf into thin slices. When the image slices are reassembled by computer software, the result is a very detailed multidimensional view of the body's interior.

**My examination requires something called “contrast material”. What is contrast material and what can I expect during the examination?**

Contrast material creates sharper and more detailed CT images depending on the region of your body that is being examined. Your technologist may give you contrast material to drink and/or may give you an injection of contrast material through an intravenous (IV) line which they will place, usually in your arm. If you are given contrast material to drink, you may have to wait for a short period of time before the start of your scan in order for the contrast material to move through your gastrointestinal tract. During the IV contrast material injection, you may have a warm, flushed feeling, and have a metallic taste in your mouth. This is a normal bodily response and passes quickly. In very rare instances, the intravenous contrast material may cause allergic symptoms. Please notify your technologist or physician immediately if an allergic reaction occurs.

**How long will the CT examination take?**

The exam will take anywhere from 10 to 30 minutes and includes the scanning time and time for the computer to process the scan data and generate images. When the examination is completed, you will be asked to wait until the technologist verifies that the images are of high enough quality for accurate interpretation.

**When will I have the results?**

When your technologist completes the exam, our radiologist with expertise in supervising and interpreting radiology examinations will evaluate all of your images and send a report to your physician, who will then discuss the results with you.