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# Computed tomography scans

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## DESCRIPTION

Computed Tomography (CT) Scan is an imaging system that uses special x-ray devices to create detailed images, or scans, of regions in the body. It is sometimes known as computerized tomography or computerized axial tomography.

The term tomography comes from the Greek words tom's means a cut, a slice, or a section and graphic means to write or record. Each image created during a CT system indicates the organs, bones, and different tissues in a thin "slice" of the body. The complete series of images produced in CT is like a loaf of sliced bread. You can look at every slice individually (2-dimensional images), or you can look at the entire loaf (a 3-dimensional image). Computer applications are used to create each kind of images.

### What can a person assume during a computer tomography procedure?

During a Computer Tomography (CT) technique, the person lies still on a table, and the table passes slowly through the center of a large donut-shaped x-ray system. With some kinds of CT scanners, the table remains still and the system movements around the person. The person would possibly hear whirring sounds during the process. At times during a CT process, the person can be requested to maintain their breath to prevent blurring of the images.

### How is computed tomography scan used in cancer?

CT (Computed Tomography) scan is used in cancers in many specific ways: To display screen for cancer, to assist diagnose the presence of a tumor, to provide information about the level of a cancer, to determine exactly in which to perform (i.e., guide) a biopsy technique, To guide certain local treatments, which includes cry treatment, radiofrequency ablation, and the implantation of radioactive seeds, To help external-beam radiation treatment or surgery, To determine whether a cancer is responding to treatment, and To detect recurrence of a tumor.

### Types of computer tomography

**Helical computer tomography:** Helical tube is generally known as helical CT or spiral CT, is an imaging method in which an entire X-ray tube is spun across the central axis of the region being scanned. These are the dominant kind of scanners on the market because they had been manufactured longer and to offer a lower price of manufacturing and purchase.

**Electron Beam Tomography (EBT):** Electron Beam Tomography (EBT) is a specific form of CT scan in which a large sufficient X-ray tube is built so that most effective path of the electrons, traveling among the cathode to anode of the X-ray tube, is spun using deflection coils. The electron beam tomography had a major advantage because sweep speeds may be much faster, allowing for less blurry imaging of moving structures, which includes the heart and arteries.

**Computer tomography perfusion imaging:** CT perfusion imaging is a specific form of Computer tomography scan to evaluate flow through blood vessels whilst injecting a comparison agent. Blood flow and organ blood volume, can all be calculated with affordable sensitivity and specificity. This kind of Computer tomography scan can be used on the heart, although sensitivity and specificity for detecting abnormalities are still lower than for different types of CT.

**Medical use:** Since it began in the 1970s,

Computer tomography has become an essential tool in clinical imaging to supplement X-rays and clinical ultrasonography. It has recently have been used for preventive therapy or screening for disease, for example, CT colon grapy for humans with a high risk of colon cancer, or full-motion heart scans for humans with a high risk of heart disease.

**Head:** CT scanning of the head is generally used to detect stroke, tumors, hemorrhage, and bone trauma.

**Neck:** Contrast CT is usually the initial study of desire for neck masses in adults.

**Breast:** Breast Computer tomography is also known as Mamma CT is one of the imaging techniques for analyzing the female and male breast. During the examination, the patient lies at the lying surface of the breast scanner.

**Lungs:** A Computer tomography scan can be used for detecting both acute and chronic adjustments in the lung parenchyma.

**Angiography:** Computed Tomography Angiography (CTA) is a kind of contrast CT to visualize the arteries and veins throughout the body.

**Cardiac:** A Computer tomography scan of the heart is performed to gain knowledge about cardiac or coronary anatomy.

**Biomechanical use:** CT scan is used in biomechanics to quickly reveal the geometry, anatomy, density and elastic module of biological tissues.