**Computed tomography (CT or CAT scan)** **of** **liver**

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Computed tomography (CT or CAT scan) is a noninvasive diagnostic imaging procedure that uses a combination of X-rays and computer technology to produce horizontal, or axial, images (often called slices) of the body. A CT scan shows detailed images of any part of the body, including the bones, muscles, fat, and organs. CT scans are more detailed than standard X-rays. In standard X-rays, a beam of energy is aimed at the body part being studied. A plate behind the body part captures the variations of the energy beam after it passes through skin, bone, muscle, and other tissue. While much information can be obtained from a standard X-ray, a lot of detail about internal organs and other structures is not available. In computed tomography, the X-ray beam moves in a circle around the body. This allows many different views of the same organ or structure. The X-ray information is sent to a computer that interprets the X-ray data and displays it in a two-dimensional (2D) form on a monitor. CT scans may be done with or without "contrast." Contrast refers to a substance taken by mouth and/or injected into an intravenous (IV) line that causes the particular organ or tissue under study to be seen more clearly. Contrast examinations may require fasting for a certain period of time before the procedure.

The liver and biliary system. The biliary system consists of the organs and ducts (bile ducts, gallbladder, and associated structures) that are involved in the production and transportation of bile.

The liver is the largest internal organ in the body. This dark reddish brown organ is located in the upper right-hand portion of the abdominal cavity, beneath the diaphragm, and on top of the right kidney and intestines. The wedge-shaped liver consists of 2 main lobes, both of which are made up of thousands of lobules. These lobules are connected to small ducts that connect with larger ducts to ultimately form the hepatic duct. The hepatic duct transports the bile produced by the liver cells to the gallbladder and duodenum (the first part of the small intestine).

The liver carries out many important functions, such as:

* Making bile. Fluid that helps break down fats and gets rid of wastes in the body
* Changing food into energy
* Clearing the blood of drugs and other poisonous substances
* Producing certain proteins for blood plasma
* Regulating blood clotting

CT scans of the liver and biliary tract (the liver, gallbladder, and bile ducts) can provide more detailed information about the liver, gallbladder, and related structures than standard X-rays of the abdomen, thus providing more information related to injuries and/or diseases of the liver and biliary tract. CT scans of the liver and biliary tract may also be used to visualize placement of needles during biopsies of the liver or during aspiration (withdrawal) of fluid from the area of the liver and/or biliary tract. CT scans of the liver are useful in the diagnosis of specific types of jaundice (yellowing of the skin and eyes as a result of certain conditions of the liver).

Reasons for the procedure. A CT scan of the liver and biliary tract may be performed to assess the liver and/or gallbladder and their related structures for tumors and other lesions, injuries, bleeding, infections, abscesses, unexplained abdominal pain, obstructions, or other conditions, particularly when another type of examination, such as X-rays, physical examination, and ultra sound is not conclusive. A CT scan of the liver may be used to distinguish between obstructive and nonobstructive jaundice. Another use of CT scans of the liver and biliary tract is to provide guidance for biopsies and/or aspiration of tissue from the liver or gallbladder.