



# GHADIALI

## General Surgery

### P R E S E N T S

Dr. Mufa T. Ghadiali is skilled in all aspects of General Surgery.  
His General Surgery Services include:

- General Surgery
- Advanced Laparoscopic Surgery
- Surgical Oncology
- Gastrointestinal Surgery
- Hernia Surgery
- Endoscopy

## CT-SCAN

Multimedia Health Education

### *Disclaimer*

This film is an educational resource only and should not be used to make a decision on management of **CT-SCAN**. All such decisions must be made in consultation with a physician or licensed healthcare provider.

Mufa T. Ghadiali, M.D., F.A.C.S

Diplomate of American Board of Surgery

6405 North Federal Hwy., Suite 402  
Fort Lauderdale, FL 33308

Tel: 954-771-8888

Fax: 954- 491-9485

[www.ghadialisurgery.com](http://www.ghadialisurgery.com)

GHADIALI

## MULTIMEDIA HEALTH EDUCATION MANUAL

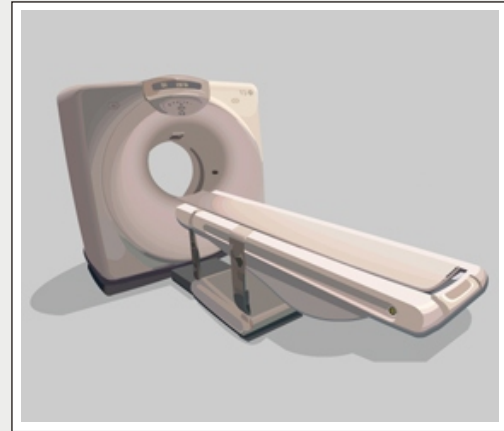
## TABLE OF CONTENTS

SECTION	CONTENT
<b>1 . Introduction</b>	
	a. What is a CT Scanner?
	b. How does a CT scanner work?
	c. CT-Scan in Medical Treatments
<b>2 . Purpose of CT-Scan</b>	
	a. Diagnostic Uses
	b. Transmission Imaging
<b>3 . Procedure</b>	
	a. Preparing a Patient for a CT Scan
	b. What are the Risks of CT-Scans?

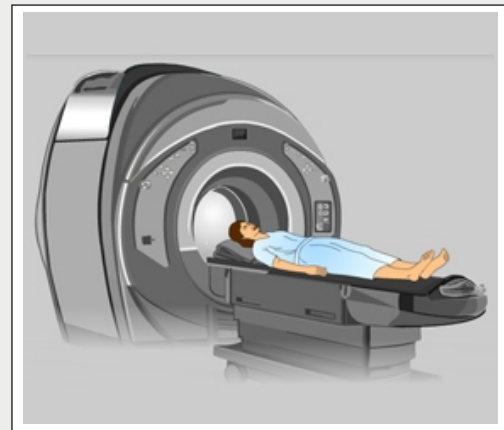
### What is a CT Scanner?

A CT Scanner sends several beams of X-Rays simultaneously from different angles to make detailed study of all parts of the body.

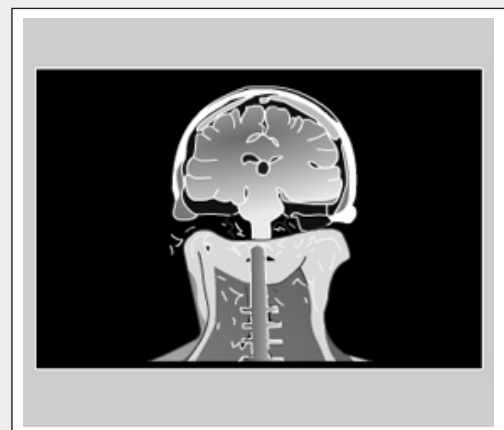
(Refer fig. 1 to 3 )



(Fig.1)



(Fig.2)



(Fig.3)

### How does a CT scanner work?

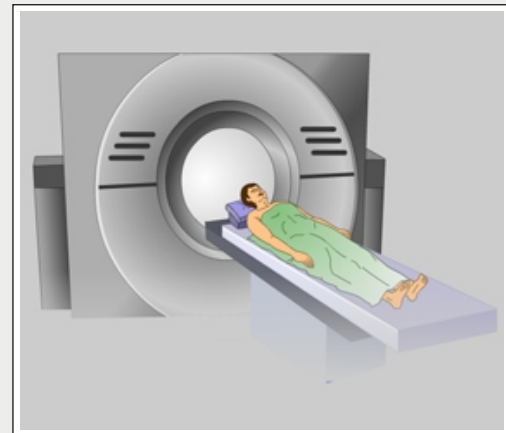
A CT Scanner uses a series of X-ray beams to build up images of the body in slices. The CT scanner emits a succession of narrow beams of radiation as it moves through an arc.

The X-ray detector within a CT scanner can see hundreds of different levels of density within the organs of the body including the tissues.

*(Refer fig. 4)*

A computer uses this information to work out the relative density of the tissues examined and finally processes the results displaying them as a two dimensional picture on a monitor.

*(Refer fig. 5)*



**(Fig.4)**



**(Fig.5)**

#### Unit 1:

#### Introduction

### CT-Scan in Medical Treatments

CT Scans are far more detailed than ordinary X-Rays. The CT scanner is particularly good at testing for bleeding in the brain, for aneurysms, brain tumors and brain damage.

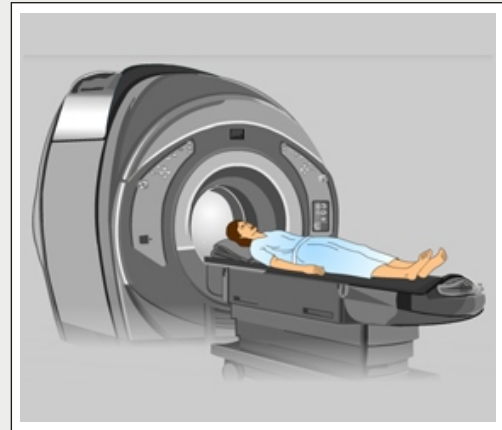
(Refer fig. 6)

A CT Scan can study all parts of the body, such as the chest, abdomen, pelvis, or an arm or leg. It can also study blood vessels, bones and the spinal cord.

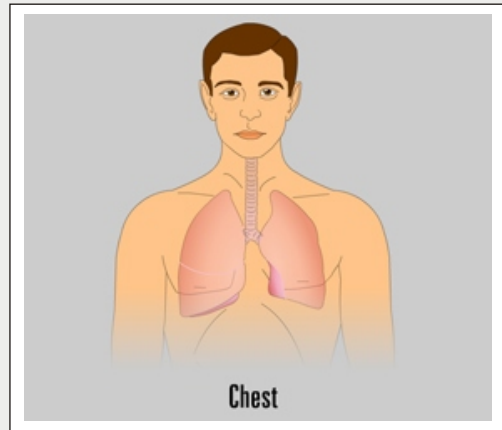
(Refer fig. 7 & 8)

Fluoroscopy CT is a special test which allows the doctor to inspect the inside of the body without having to operate or perform unpleasant examinations.

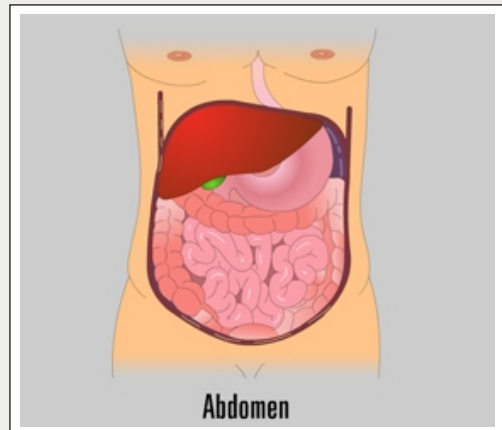
(Refer fig. 9)



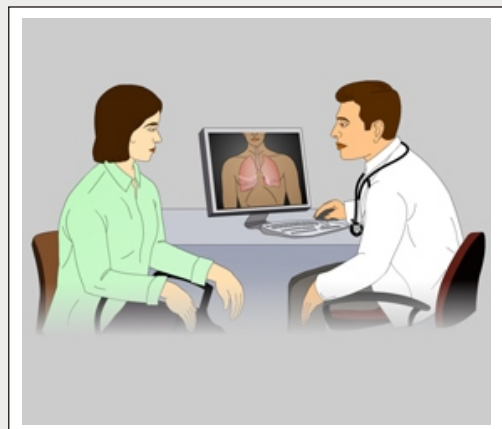
(Fig.6)



(Fig.7)



(Fig.8)



(Fig.9)

## Unit 2:

## Purpose of CT-Scan

## Diagnostic Uses

CT Scans are mainly used to study the different areas of the body. A CT Scan of the chest (thorax) can identify problems within the lungs, heart, esophagus, and the blood vessels or tissues in the chest. The common chest problems that CT Scans identify are lung cancer, pulmonary embolisms, and aneurysms.

(Refer fig. 10)

A CT Scan of the abdomen can find cysts, abscesses, infection, tumors, bleeding in the abdomen, enlarged lymph nodes, appendicitis, as well as other abnormalities.

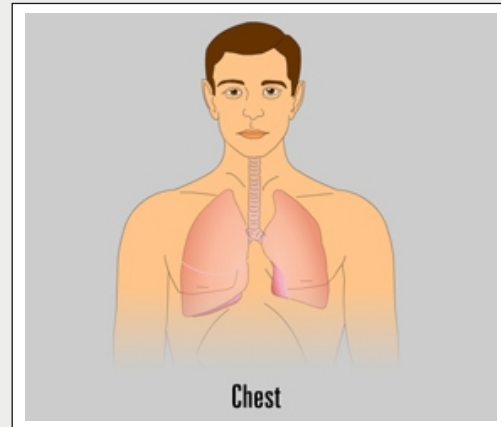
(Refer fig. 11)

A CT Scan of the liver can find liver tumors, bleeding from the liver and liver diseases. A CT Scan of the liver can also help determine the cause of Jaundice.

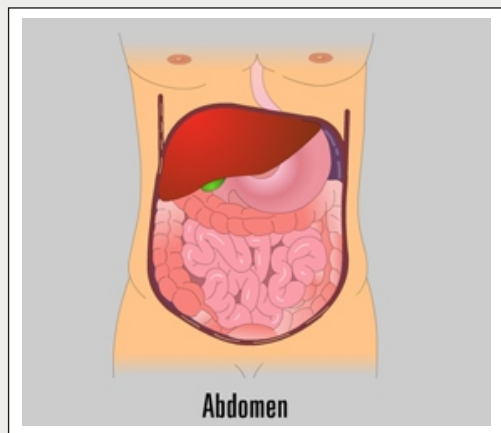
(Refer fig. 12)

A CT Scan of the kidneys can find kidney stones, bladder stones or blockage of the urinary tract.

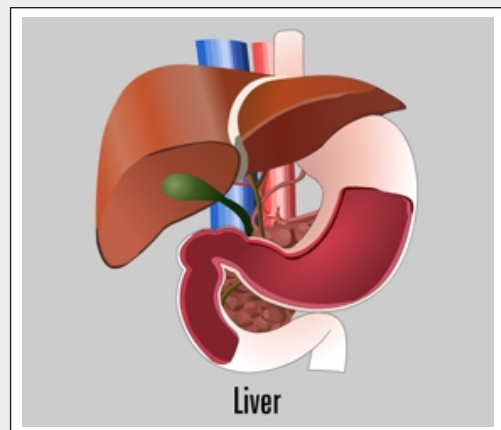
(Refer fig. 13)



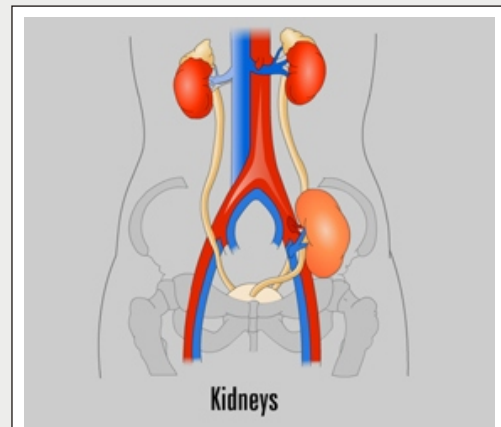
(Fig.10)



(Fig.11)



(Fig.12)



(Fig.13)

### Unit 2:

### Purpose of CT-Scan

#### Diagnostic Uses

A CT scan can look for problems of the arms or legs, including the shoulder, elbow, wrist, hand, hip, knee, ankle, or foot.

(Refer fig. 14)

A CT scan can look for problems within the organs of the pelvis. For a woman, these include the uterus, ovaries, and fallopian tubes. For a man, the pelvic organs include the prostate gland and the seminal vesicles.

(Refer fig. 15)

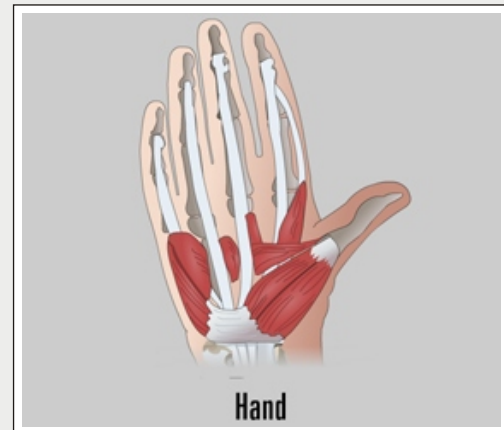
#### Transmission Imaging

X-rays, Computer Tomography Scans (CT Scans) and fluoroscopy are radiological examinations whose images are produced by transmission.

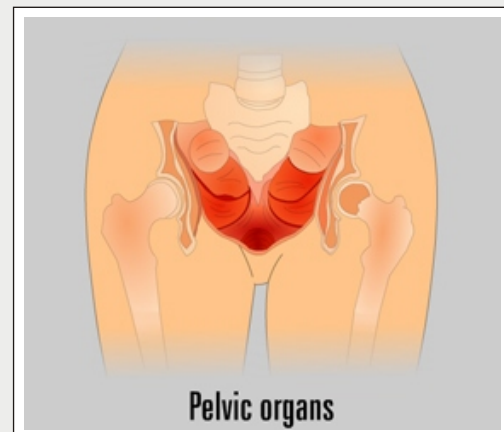
A CT scan is a diagnostic imaging procedure that uses a combination of X-rays and computer technology to produce cross-sectional images both horizontally and vertically of the body.

A CT scan shows detailed images of any part of the body, including the bones, muscles, fat, and organs.

(Refer fig. 16)



(Fig.14)



(Fig.15)



(Fig.16)

## Unit 3:

## Procedure

## Preparing a Patient for a CT scan

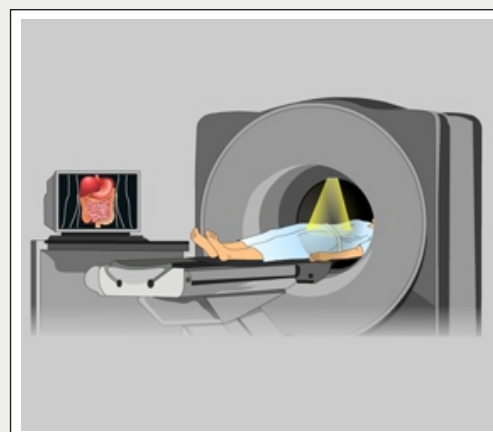
A CT Scan is usually done by a radiology technologist. The scan may need a contrast dye or substance that improves the picture of certain tissues or blood vessels. This material may be swallowed, given as an enema or injected into the blood stream, depending on the part of your body that is to be scanned.

If the patient is undergoing an abdominal scan, they will be asked not to eat for six hours before the test. The patient will be asked to remove any jewellery or metal fastenings that are in the area to be scanned.

During the scan the patient lies on a bed that is attached to the CT scanner, which is a large doughnut-shaped machine.



(Fig.17)



(Fig.18)

The CT scanner sends X-rays through the patient's body and the bed moves slowly backwards and forwards to allow the scanner to take pictures of the body. The length of the scan depends on the number of pictures taken at different angles.

(Refer fig. 17 & 18)

## What are the Risks of CT-Scans?

Doctors do not generally recommend CT Scans without a good medical reason as there is far more X-ray exposure than is involved in ordinary X-rays. Pregnant women should not have a CT scan as there is a small risk that X-rays may cause abnormality to the unborn child.

(Refer fig. 19)



(Fig.19)



Nursing mothers should wait for 24 hours after a scan using a contrast dye before resuming breastfeeding.

*(Refer fig. 20)*



**(Fig.20)**

The contrast dye used in CT Scans often contains iodine, which can cause allergic reaction in some patients.

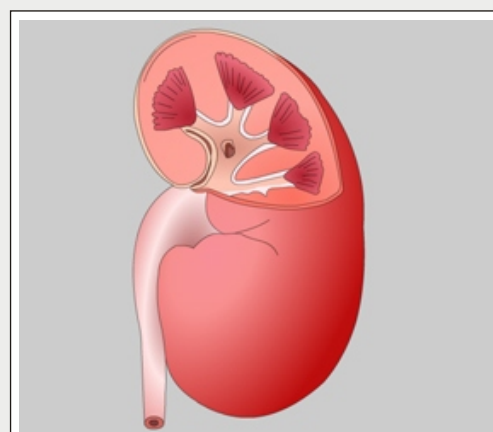
*(Refer fig. 21)*



**(Fig.21)**

Also, the dye may cause some kidney damage to people who already have kidney problems.

*(Refer fig. 22)*



**(Fig.22)**

Although every effort is made to educate you on **CT-Scan** and take control, there will be specific information that will not be discussed. Talk to your doctor or health care provider about any concerns you have about **CT-Scan**.

**YOUR SURGERY DATE**

**READ YOUR BOOK AND MATERIAL**

**VIEW YOUR VIDEO /CD / DVD / WEBSITE**

**PRE - HABILITATION**

**ARRANGE FOR BLOOD**

**MEDICAL CHECK UP**

**ADVANCE MEDICAL DIRECTIVE**

**PRE - ADMISSION TESTING**

**FAMILY SUPPORT REVIEW**

**Physician's Name :** \_\_\_\_\_

**Patient's Name :** \_\_\_\_\_

**Physician's Signature:** \_\_\_\_\_

**Patient's Signature:** \_\_\_\_\_

**Date :** \_\_\_\_\_

**Date :** \_\_\_\_\_