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Q NO: 1:

**Thyroid disease:** Thyroid disease is a medical condition that affects the function of the thyroid gland.

The thyroid gland is located at the front of the neck and produces thyroid hormones:

**Role of Nuclear Medicine**

in the diagnosis of

**Thyroid diseases:**

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As well as its  
treatment:

Nuclear medicine is directly involved in both the diagnosis and treatment of thyroid disease, which requires an understanding of the pathophysiology and management of thyroid disorders in addition to expertise in nuclear methodology.

Thyroid uptake and imaging,

The principal nuclear tests in thyroid disease, may be used as follows;

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1= Differential diagnosis of hyperthyroidism; A very low thyroid uptake suggests destructive (subacute) thyroiditis, a self-limited disorder, whereas a normal or elevated uptake is consistent with toxic nodular goiter and Graves disease.

scintigraphic characteristics also help differentiate between nodular and Graves disease.

2= Function of thyroid nodules; Fine-needle aspiration biopsy with cytological examination is used routinely to assess

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for malignancy in thyroid nodules.

$^{131}\text{I}$  scintigraphy may be of assistance before FNAB. Hot nodules are generally benign and do not require FNAB, while cold nodules may be malignant.

3- Differential diagnosis of congenital hypothyroidism;

$^{131}\text{I}$  scintigraphy combined with ultrasound examination

may be used to identify such conditions as thyroid agenesis,

dysmorphogenesis, and

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incomplete thyroid descent.

Treatment of Graves disease and toxic nodular disease with  $^{131}\text{I}$  may require greater clinical involvement and decision ~~of~~ analysis compared with thyroid uptake and imaging.

The following aspects of treatment are particularly important:

**1= Risk;**

Radiiodine treatment may occasionally aggravate hyperthyroidism, Graves ophthalmopathy, and airway obstruction caused by large

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nodular goiters. Alternative treatments, including the temporary use of antithyroid drugs, and surgery for nodular goiters, may be considered.

## 2= Radioiodine dose:

Use of hyperthyroidism with a single treatment is desirable, though not always possible. Such factors as a large goiter, severe hyperthyroidism, and prior propylthiouracil therapy, may contribute to treatment failure.

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### 3: Informed consent: A

detailed discussion with the patient regarding the clinical risks, outcomes, and side effects of (131) is a critical component of successful management.

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QNO: 2:

polycystic kidney: polycystic

Kidney disease (PKD) is

an inherited disorder

in which clusters of

cysts develop primarily

with in your kidneys,

causing your kidneys to

enlarge and lose function

over time. cysts are

noncancerous round sacs

containing fluid. The cysts

vary in size, and they

can grow very large.



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## Symptoms:

- ⇒ High blood pressure.
- ⇒ Back or side pain.
- ⇒ Headache.
- ⇒ Blood in your urine.
- ⇒ Kidney stones.
- ⇒ Kidney failure.
- ⇒ Urinary tract or kidney infections.

## Complications:

- ⇒ High blood pressure.
- ⇒ Loss of kidney function.
- ⇒ Pregnancy complications.
- ⇒ Growth of cysts in the liver.
- ⇒ Development of an aneurysm in the brain.

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- ⇒ Heart valve abnormalities
- ⇒ colon problems
- ⇒ chronic pain.

### Causes:

people who have PKD were born with it. PKD is almost always inherited from a parent or from both parents.

people of all genders, age, races, ~~and~~ ethnicities and nationalities can have PKD. Men and women get PKD equally as often. If you have a blood relative with PKD, you are more likely to have PKD or carry the gene that causes it.

if you carry the gene that causes PKD but you do not have the disease, you are called a carrier. This is possible with autosomal recessive PKD.

Can PKD be prevented:

⇒ Keep a healthy blood pressure

⇒ Keep a healthy blood sugar

⇒ Keep a healthy weight level

⇒ Follow a low-salt, low-fat diet.

⇒ Limit alcohol.

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Q NO: 3:

**Lithotripsy:** Lithotripsy is a medical procedure involving the physical destruction of hardened masses like kidney stones, bezoars or gall stones.

The term is derived from Greek words meaning "breaking stones"

**Therapeutic or diagnostic tool**

It is a therapeutic tool against the kidney or

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other organs stone.

General criteria of performing this procedure:-

Lithotripsy treats kidney stones by sending focused ultrasonic energy or shock waves directly to the stone first located with fluoroscopy (a type of X-ray movie) or ultrasound (high frequency sound waves)

The shock waves break a large stone into smaller stones that will pass through the urinary system.

Q NO: 4:

**Suffix -otomy:** The suffix-

otomy is derived from

the Greek suffix -tomos

which mean cutting, sharp,

or separate.

(Terms used in medical dictionary:

Example:

**Anatomy:** (ana-tomy): The

study of the physical

structure of living organisms

**Autotomy:** (aut-otomy):  
 The act of removing an appendage from the body in order to escape when trapped.

**Craniotomy:** (crani-otomy):  
 surgical cutting of the skull, typically done to provide access to the brain when surgery is needed.

**Episiotomy:** (episi-otomy):  
 surgical cut made into the area b/w the vagina and anus

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To feeding during the  
child birthing process.

**Gastrostomy:** (gastro-stomy):  
surgical

incision made into the  
stomach for the purpose  
of feeding an individual  
who is incapable of  
taking in food through  
normal processes.

**Hysterotomy:** (hyster-stomy):  
surgical incision made into  
the ~~uterus~~ uterus.

**Phlebotomy:** (phleb-stomy):  
incision or puncture made



into a vein in order to draw blood.

**Laparotomy:** (Lapar-otomy):

incision made into the abdominal wall for the purpose of examining abdominal problem.

**Lobotomy:** (Lob-otomy):

incision made into a lobe of a gland or organ.

**Rhizotomy:** (Rhiz-otomy):

surgical severing of a cranial nerve root or spinal nerve root

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in order to relieve back pain or decrease muscle spasms.

**Tenotomy:** (ten-otomy): incision

made into the tendon in order to correct a muscle deformity.

**Tracheotomy:** (trache-otomy):

incision made into the trachea for the purpose of inserting a tube to allow air to flow the lungs.

Q NO: 5:

## Urinary tract infection (UTI):

A urinary tract infection is an infection in any part of your urinary system, your kidneys, ureters, bladder and urethra.

Most infection involve the lower urinary tract - the bladder and the urethra.

women are at greater risk of developing a UTI than are men.

## Symptoms:

urinary tract infections don't always cause signs and symptoms, but when they do they may include;

- ⇒ A strong, persistent urge to urinate.
- ⇒ A burning sensation when urinating.
- ⇒ passing frequent, small amounts of urine.
- ⇒ urine that appears cloudy
- ⇒ strong-smelling urine.

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## Types of UTIs

An infection can happen in different parts of your urinary tract. Each type has a different name, based on where it is.

Cystitis: (Bladder);

Pyelonephritis: (Kidneys);

Urethritis: (Urethra);

Caused:

UTI is usually caused by *Escherichia coli* (E. coli) a types of

bacteria commonly found  
in the gastrointestinal  
tract.

However, sometime other  
bacteria are responsible.  
sexual intercourse may  
lead to cystitis, but  
you don't have to be  
sexually active to  
develop it.

## UTI Treatment:

Treatment

of UTIs depends on the  
cause. Your doctor will  
be able to determine  
which organism is

causing the infection from the test results used to confirm the diagnosis.

In most cases, the cause is bacteria. UTIs caused by bacteria are treated with antibiotics.

In some cases, viruses or fungi are the causes.

Viral UTIs are treated with medications called antivirals.

Often, the antiviral cidofovir is the choice to treat viral UTIs. Fungal UTIs are treated with

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medications called  
antifungals.