



# A REVIEW ON: “THYROID DISEASE”

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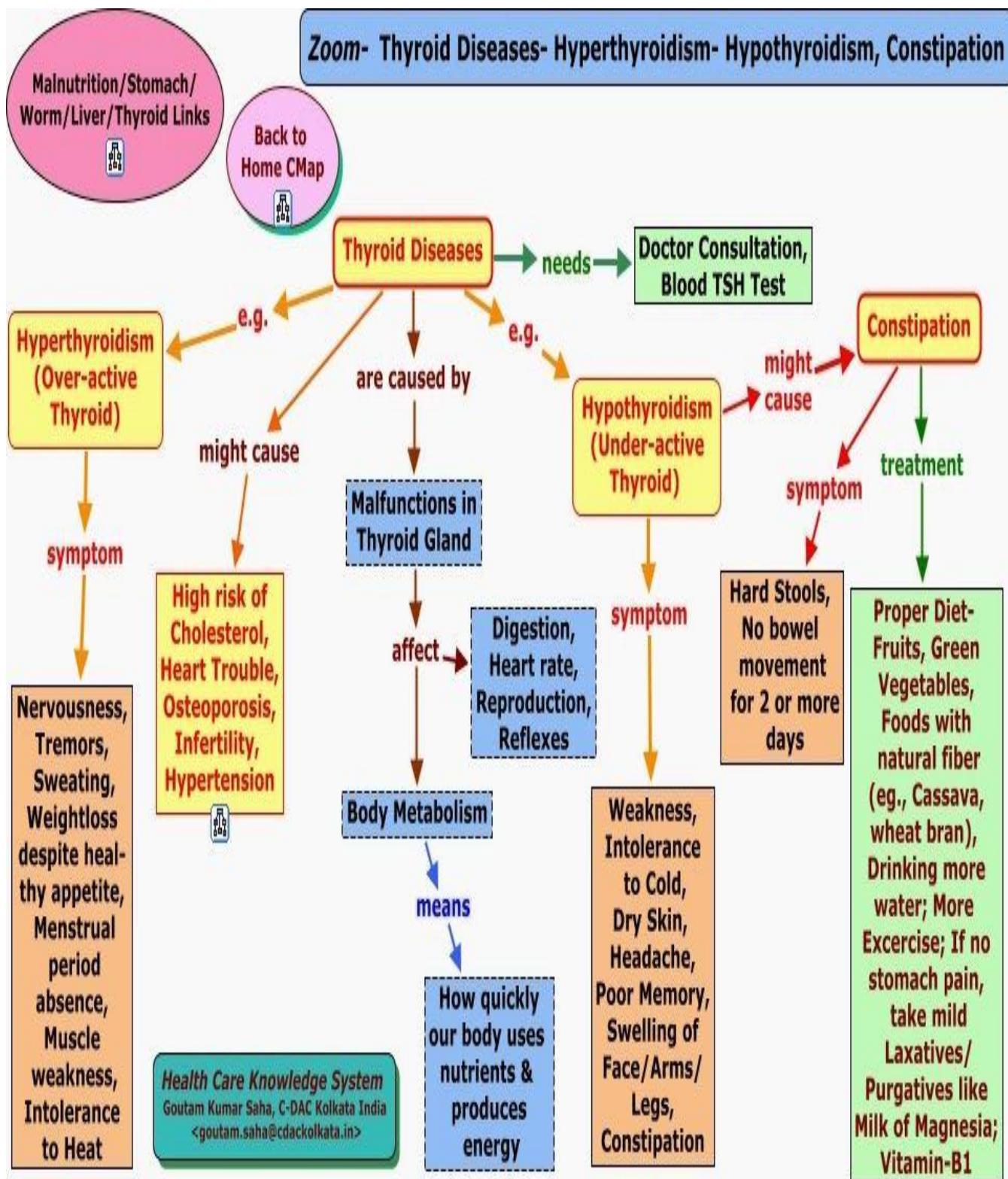
## ABSTRACT:

Thyroid disorders are among the most common disease of the endocrine system and may be divided into the groups of Hypothyroidism and Hyperthyroidism and thyroid nodules/cancer. This chapter will focus on the clinical and biochemical features in the diagnosis and management of all three classes of thyroid disease with extra attention given to special situation like pregnancy and paediatrics.

Hypothyroidism is usually to surgical thyroidectomy or autoimmune destruction of the gland; it is reliably diagnosed and monitored through measure of thyroid stimulating hormone(TSH).

Hyperthyroidism is commonly caused by auto-antibody driven by thyroid hormone over produce or excessive thyroid secretion by a functional threnodial. Hypothyroidism is diagnosed and manage through the use of TSH, free Thyroxine and free tri-iodothyronine measure. severe thyroid auto antibodies may be measured but are specific to the disease.

Diagnosis of thyroid disease in pregnancy may require slightly different laboratory reference range for thyroid hormone measure. Thyroglobulin and Calcitonin are two common biochemical tumour markers useful in this disease.

**Graphical Abstract-**

**Keywords** Hypothyroidism, Hyperthyroidism, Calcitonin, Thyroxine, Tri-iodothyronine.

## INTRODUCTION

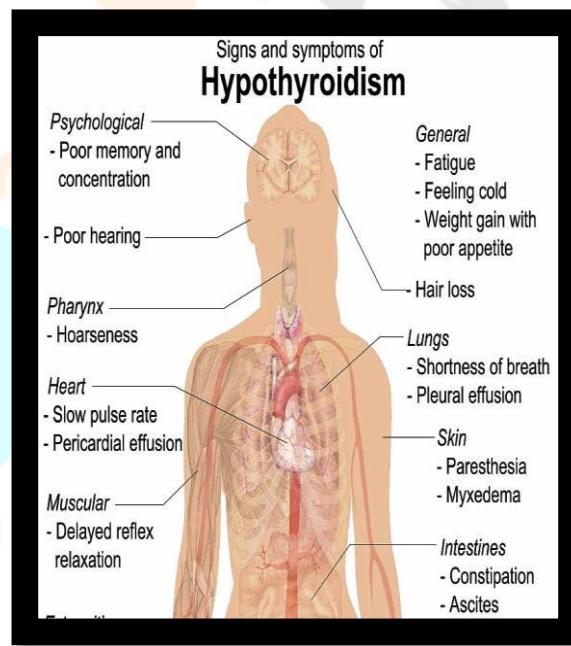
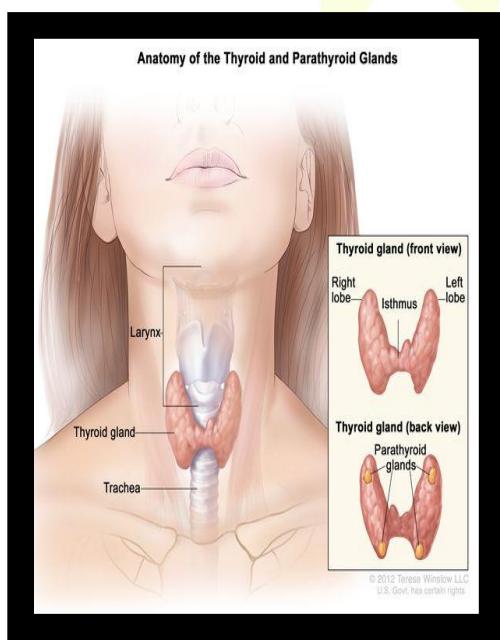
Thyroid is a small organ that's located in the front of neck wrapped around the windpipe (trachea). It's shaped like a butterfly smaller in the middle with two wind wings that extend around the side of throat. Thyroid make hormones that help control many vital functions of the body.

If body makes large thyroid hormone can develop condition called Hyperthyroidism. If body makes too little thyroid hormone it's called Hypothyroidism. Both of these conditions are serious.

Thyroid control metabolism with few specific hormone T4 (Thyroxine contain four iodine atoms) and T3 (Tri-iodothyronine contain three idiodide atoms). This T3 and T4 hormones created by the thyroid. Thyroid disorders affect a substantial proportion of the general population but most have a remarkably higher incidence in women. Worldwide the most common cause of thyroid disorders is iodine deficiency.

In iodine sufficient regions, the autoimmune thyroid disease, Hashimoto's thyroiditis and Grave's disease, are the most common clinical entities affecting the thyroid. Pregnancy is characterised by intricate physiological changes in iodine balance, thyroid activities, thyroid hormone transport, and peripheral metabolism. Pregnancy also has modulating influence on autoimmune thyroid disorders and can be complicated by distinct form of Hyperthyroidism, gestational Hyperthyroidism with secretion of placental chronic gonadotropin rise thyroid hormone.

### Causes of thyroid disease:



### B] Hyperthyroidism thyroid symptom

Experiencing anxiety, irritate Hypothyroidism and Hyperthyroidism are two main types of thyroid disease. It can be caused by other disease that impact the way of thyroid gland works.

**D) Iodine deficiency-**

Iodine is used by the thyroid to produce hormone.(usually women's have not sufficient amount of iodine that's why generally women's have to suffering from thyroid disease.)

**E) A-non-functioning thyroid gland-**

Sometimes, the thyroid gland doesn't work correctly from birth. This affects about 1 in 4000 new-borns baby. If left untreated the child could have both physical and mental issues in the future.

**C) Nodules-**

Hyperthyroidism can be caused by nodules that's are overactive with in the thyroid. Single nodule is called Toxic autonomously functioning thyroid nodule, while a gland with several nodules is called a Toxic multinodular goiter.

**D) Excessive Iodine-**

When body contains too much iodine (the thyroid makes more thyroid hormone). Excessive iodine can be found in medications like Amiodarone, a heart medications and cough syrup.

**E) Diabetes-**

If someone having diabetes, then they are higher risk of developing thyroid disease than people without diabetes. There are few things which can feel best that are getting enough sleep, diet, exercising regularly.

**Symptoms of thyroid disease-**

There are many symptoms of thyroid disease. The symptoms of thyroid disease can be divided into two groups are Hypothyroidism and Hyperthyroidism.

**A] Hypothyroidism thyroid symptom**

- Fatigue (feeling tired)
- Gaining weight
- Experiencing for get fullness
- Having frequent and heavy menstrual periods
- Having dry and coarse hairs
- Having hoarse voice
- Experiencing and intolerance to cold temperatures.
- Nervousness
- Having trouble sleeping
- Loss in weight
- Having an enlarged thyroid gland or goitre
- Having muscles weakness and tremors
- Experiencing irregular menstrual periods or having menstrual cycle stops.
- Feeling sensitive to heat
- Eye irritation or vision problem.

**Diagnosis & treatment for thyroid disease**

Thyroid disease can be difficult to diagnose because the symptoms are easily confused. There are tests that can be help to determine if symptoms are being caused by thyroid issue, these tests are Blood test, Imagine test and Physical exam.

## A] Blood test-

One of the most definitive way to diagnose a thyroid problem is through blood tests. These tests are done by taking blood from vein of arm. Thyroid blood test is used to diagnoses thyroid disorder associated with Hypothyroidism and Hyperthyroidism. This includes

- I. Thyroiditis
- II. Grave's disease
- III. Hashimoto's disease
- IV. Goitre
- V. Thyroid nodules
- VI. Thyroid cancer.

- T4: Thyroxine-

Tests for Hypothyroidism and Hyperthyroidism, and used to monitor treatment of thyroid disease. Low T4 is seen with Hypothyroidism, whereas high T4 level may indicate Hyperthyroidism. Normal T4 range for an adult is 5.0-11.0 ug/dL(micrograms/decilitres of blood) T3: Tri-iodothyronine Tests help to diagnose Hyperthyroidism or to show the severity of Hyperthyroidism. Low T3 levels can be observed in Hypothyroidism, but more obtain this test is useful in the diagnosis and management of Hyperthyroidism, where T3 level are elevated. Normal T3 range is 100-200 ng/dL(nanograms per decilitres of blood).

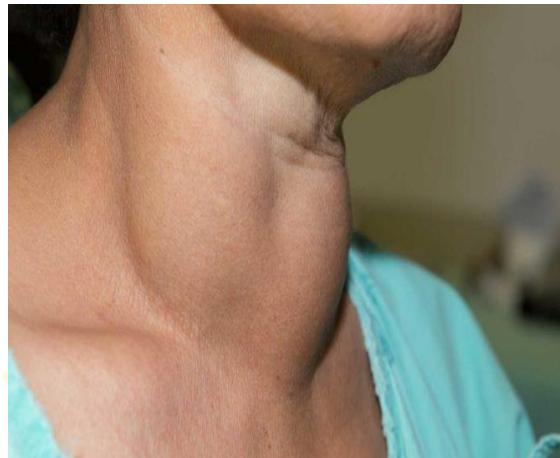
## B] Imagine test-

Healthcare provider might do an imagine test called thyroid scan. This allows to check for an increase size, shape or growth of nodules. Imagine test also called an Ultrasound, this is a diagnostic procedure that transmits high frequency sound, inaudible to human ear. In imagine test have to lie flat on padded on examined table with head positioning on pillow so that head is tilted back. A warm water, soluble gel is applied to the skin over area that been examined. This ultrasound takes 20-30 minutes



## C] Physical exam-

Physical exam is one of the ways to quickly check thyroid. This is a very simple and painless test, where checking neck for any growth or enlargement of thyroid.



## TREATMENT for thyroid disease

- ❖ While treating thyroid disease, it is necessary to return hormone level to normal. If thyroid hormone is in high level Hyperthyroidism treatments includes

A] Anti-thyroid drugs(Methimazole and Propylthiouracil)-

These are medications that stops thyroid from making hormone.

B] Radioactive iodine –

This treatment damage the cells of thyroid preventing it from making high level of thyroid hormone.

C] Beta blockers-

This medication doesn't change the amount of hormone in body but they help in controlling symptoms.

D] Surgery-

A more permanent form of treatment is surgically removed thyroid (Thyroidectomy) this will stop it from creating hormone. If thyroid hormone is in low level Hyperthyroidism treatments includes-

Thyroid replacement medications this drug is synthetic (manmade) way to add thyroid hormones back into body. One drug that's commonly used to prevent Hypothyroidism is Levothyroxine.

## DRUGS used for thyroid disease-

1. Levothyroxine
2. Synthroid
3. Tirosint
4. Unithroid.



## CONCLUSION

Thyroid is mainly influenced by iodine deficiency or excess in iodine. If any women have to suffered from thyroid disease then she has also face to problem of menstrual periods. To check thyroid disease there are mainly three tests Blood test, Imagine test and Physical exam. Surgery is most effective treatment for controlling thyroid disease and Levothyroxine drugs are mostly used for controlling thyroid disease.

Thyroid disorder is one of the most complex health problems facing America and India today. Despite such a high. Prevalence of the thyroid problem, conventional health care has had a limited success in managing thyroid disease. Instead of treating autoimmune disease, we should look foremost to addressing the cause.

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