



For the use of registered medical practitioner or hospital or laboratory only.

# UNDERSTANDING ***THYROID DISORDERS:***

# ARE YOU AT RISK?

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You could be one of them. Read on to find out.



## THYROID DISORDERS IN INDIA.<sup>1</sup>



**According to an epidemiology study done across 8 cities in India:**



1 in 10 Indians suffer from Hypothyroidism



Additionally, 8% may have subclinical hypothyroidism (borderline thyroid disorders).



Women are prone to thyroid disorders (8 out of 10).



People aged 35 years and above are at a higher risk of thyroid disorders.



It is also observed that thyroid disorders run in families.

## WHERE IS MY THYROID GLAND?<sup>2</sup>



**The thyroid gland is butterfly-shaped organ located on the front side of your neck, along the windpipe.**



## WHAT DOES THE THYROID GLAND DO FOR ME?<sup>3</sup>



**The function of the thyroid gland is to make two thyroid hormones:**

- Tetra-iodothyronine or Thyroxine (T4) – Major hormone
- Tri-iodothyronine (T3)

**These hormones have an effect on nearly all the tissues of body.**

### **Role of these hormones.<sup>3</sup>**

- Thyroid hormones affect your metabolic rate, which is a measure of how fast or slow your brain, heart, muscles, liver or other parts of your body work.
- If your body works too fast or too slow, you may feel ill. For example, if you may feel tired and cold. Or, if you have too much thyroid hormone, you might feel nervous, jumpy and warm.
- These hormones also influence growth, development and reproduction.

## WHAT HAPPENS WHEN MY THYROID GLAND DOESN'T WORK PROPERLY?<sup>3</sup>



**A dysfunctional thyroid gland may lead to abnormal thyroid hormone production which causes:**

- Hypothyroidism – insufficient thyroid hormone Production (more common)
- Hyperthyroidism – Excess thyroid hormone Production (less common)

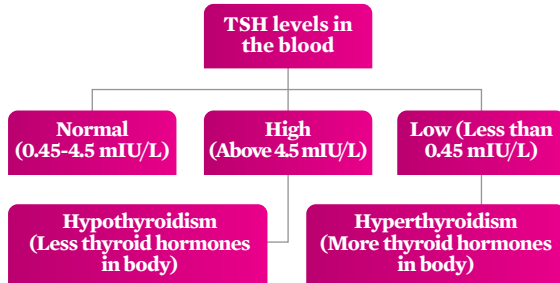
## COMMON SIGNS AND SYMPTOMS OF THYROID DISORDERS<sup>2</sup>



Hypothyroidism	Hyperthyroidism
Unexplained weight gain	Unexplained weight loss
Tiredness	Trouble in concentrating
Change in voice	Feeling too warm
Swelling on face/legs	Fast heart rate and diarrhea
Hair Loss	Trouble with sleeping
Constipation	Nervous and irritable

## WHAT ARE THE TESTS FOR DETECTING THYROID DISORDERS? HOW WILL I KNOW IF I HAVE A THYROID DISORDER?<sup>2</sup>

**The Thyroid Stimulating Hormone (TSH) is the most common test to detect thyroid disorders.**



The normal range may differ from laboratory to laboratory. If your TSH is above or below the normal range, then it is advisable to consult your doctor. During pregnancy, the normal TSH range differs with that of a non-pregnant woman's.



## HOW OFTEN SHOULD I GET MY THYROID TESTS DONE?<sup>2</sup>

**Newly detected hypothyroid patients should take tests after 6-8 weeks. However, since the condition may differ from patient to patient, you should consult your doctor for more information.**



## WHAT COULD BE THE CAUSE OF MY HYPOTHYROIDISM?<sup>3</sup>

- A defective thyroid gland (autoimmune disorder)
- Congenital (from childhood)
- Drug-induced
- Removal of thyroid gland
- Complete lack of the gland
- A disorder of the pituitary gland (master gland of the body)
- Exposure to excessive amount of iodine

## HOW DO I KNOW IF I AM AT RISK OF THYROID DISORDERS?

**Although anyone can develop thyroid disorders, you are at an increased risk if you:**

- Are a woman older than 35 years.<sup>3</sup>
- Have an autoimmune disease e.g. Diabetes<sup>3</sup>
- Have a family member who is suffering from a thyroid disorder.<sup>3</sup>
- Have been treated with radioactive iodine or anti-thyroid medication.<sup>3</sup>
- Have had thyroid surgery (partial thyroidectomy).<sup>3</sup>
- Are pregnant.<sup>4,5</sup>

## HYPOTHYROIDISM<sup>2</sup>

A condition in which the body lacks sufficient thyroid hormone production.



## WHAT ARE THE SIGNS AND SYMPTOMS THAT MIGHT INDICATE HYPOTHYROIDISM?<sup>2</sup>



- Unexplained weight gain
- Tiredness
- Change in voice
- Swelling on face/legs
- Hair Loss
- Constipation
- Difficulty in sleeping
- Corse, dry hair
- Dry, rough, pale skin
- Muscle cramps and frequent muscle aches
- Irritability
- Memory loss
- Changes in menstrual cycles
- Decreased libido
- Slow heart rate
- Sensitivity to cold
- Weakness

## WHAT WILL HAPPEN IF I LEAVE MY HYPOTHYROIDISM UNTREATED?



The thyroid gland has an impact on many organs of the human body like:



Liver



Brain



Intestines



Heart



Reproductive System  
(problem with fertility, abortions)



Kidneys

## WHAT ARE THE OTHER CONDITIONS THAT ARE COMMONLY ASSOCIATED WITH HYPOTHYROIDISM?



If you have any of the following conditions, you are likely to be at risk of thyroid disorders.

- Diabetes<sup>7</sup>
- High cholesterol<sup>9</sup>
- High Blood Pressure<sup>11</sup>
- Depression<sup>8</sup>
- Anaemia<sup>10</sup>



## HYPOTHYROIDISM AND PREGNANCY<sup>6</sup>



Pregnancy related hormones lead to a decrease in thyroid hormone levels. Few reports suggest that up to 14% of pregnant women may have hypothyroidism.

## HOW DOES HYPOTHYROIDISM AFFECT PREGNANCY?



Severe untreated or inadequately treated hypothyroidism in pregnancy may have an impact on the pregnant woman and the fetus. Untreated hypothyroidism in pregnancy can lead to certain complications like an elevated blood pressure during pregnancy, loss of blood during and after delivery and sometimes even a reduction in the intelligence in a child.<sup>4,5</sup>

### Mother

Hypertension  
Maternal Anemia  
Postpartum haemorrhage  
Congestive heart failure



### Foetus

Still-birth  
Growth retardation  
Premature birth  
Placental abnormalities



### Child

Low birth weight  
Lower IQ



## MONITORING<sup>5</sup>



Guidelines suggest that a thyroid test be done as soon as pregnancy is confirmed. Serum TSH values may vary between laboratories. The chart below indicates the normal range during pregnancy.

Pregnancy	Normal TSH (mIU/L)
Trimester 1	≤ 2.5
Trimester 2 & 3	≤ 3

## HYPOTHYROIDISM AND DIABETES<sup>7</sup>



- Diabetes and thyroid disease are both endocrine, or hormone, problems.

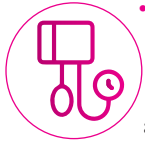


- Diabetic patients have a higher prevalence of thyroid disorders compared with the normal population.
- When thyroid disease occurs in someone with diabetes, it can make blood glucose control more difficult.
- Hypothyroidism is connected to insulin resistance, a state where cells in the body stop responding to insulin's signal to take sugar out of the blood. This results in high blood sugar levels, directly increasing the risk of diabetes complications.

## HYPOTHYROIDISM AND HYPERTENSION<sup>12</sup>



- 33% patients with elevated blood pressure have hypothyroidism.



- Hypothyroidism can affect the heart and circulatory system in a number of ways. Insufficient thyroid hormone slows the heart rate. Because it also makes the arteries less elastic, blood pressure rises in order to circulate blood around the body.
- Hypothyroidism and elevated blood pressure can increase the risk of heart complications.

## HYPOTHYROIDISM & POLYCYSTIC OVARY SYNDROME (PCOS)<sup>13</sup>



- Hypothyroidism is very common in PCOS patients. These two entities have many features in common.



- Both genetic and environmental factors are believed to be contributing to thyroid disorders in PCOS. Hypothyroidism is known to cause PCOS-like ovaries and overall worsening of PCOS and insulin resistance.

## HYPOTHYROIDISM AND DYSLIPIDEMIA<sup>9</sup>



- Dyslipidemia refers to abnormally elevated cholesterol or fats (lipids) in the blood.



- Too much of the wrong type of cholesterol can clog arteries and can increase the risk for heart disease.
- Body needs thyroid hormones to make cholesterol and to get rid of the cholesterol it doesn't need. When thyroid hormone levels are low (hypothyroidism), body doesn't break down and remove LDL cholesterol as efficiently as usual. LDL cholesterol can then build up in blood.
- Thyroid hormone levels don't have to be very low to increase cholesterol. Even people with mildly low thyroid levels, called subclinical hypothyroidism, can have higher than normal LDL cholesterol.

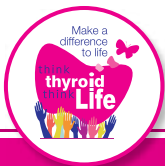
## HYPOTHYROIDISM AND DEPRESSION<sup>8</sup>



- Although they're separate diseases, depression is sometimes a symptom of hypothyroidism.
- Hypothyroidism is a condition characterized by a "sluggish" or underactive thyroid. It's linked specifically to depression. The deficiency of thyroid hormones in central nervous system can cause fatigue, weight gain, and a lack of energy. These are all also the symptoms of clinical depression.



- The overlap in hypothyroidism and depression can result in a misdiagnosis. And if a patient has been diagnosed with a depression but have an undiagnosed hypothyroidism, sometimes it may lead to 'refractory depression'. Refractory depression is a condition where anti-depressant medicines fail to achieve desired results in a patient. In such condition it is necessary to diagnose and treat underlying hypothyroidism.



## HYPERTHYROIDISM<sup>2</sup>



This is a less common condition, in which there is excess production of the thyroid hormone.



### WHAT ARE THE SIGNS AND SYMPTOMS THAT MIGHT INDICATE HYPERTHYROIDISM?<sup>2</sup>



- Fatigue or muscle weakness
- Hand tremors
- Mood swings
- Nervousness or anxiety
- Rapid heartbeat
- Heart palpitations or irregular heartbeat
- Skin dryness
- Trouble with sleeping
- Weight loss
- Increased frequency of bowel movements
- Light periods or skipping periods

### WHAT HAPPENS IF I LEAVE MY HYPERTHYROIDISM UNTREATED?<sup>2</sup>



**Hyperthyroidism, if not treated, could affect your health in many ways. You could develop the following conditions:**

- Heart problems (rapid heart rate, heart failure)
- Brittle bones
- Eye problems
- Red, swollen skin

A sudden intensification of the symptoms of hyperthyroidism could lead to fever, rapid pulse and even acutely disturbed state of mind.



## MYTHS AND FACTS



Myths	Facts
Thyroxine replacement is not absolutely safe	Adverse reactions associated with thyroxine therapy are primarily those of hyperthyroidism due to therapeutic overdosage. Please consult your doctor for more information on thyroid disorders.
Thyroid patients with obesity cannot lose weight.	Hypothyroidism can cause a mild weight gain of 5 to 9.7kg, but does not cause obesity.
Once you get thyroid dysfunction, it is forever.	Hypothyroidism cannot be cured but it can be treated and in most people, completely controlled.
Thyroid has no role to play in children.	Thyroid hormone is essential for the brain to develop normally. In a health pregnancy, the woman's thyroid supplies the developing baby with thyroid hormone during the first trimester.



## WHAT ARE MY RESPONSIBILITIES?



Consult your doctor if you experience any of the symptoms.



Take your medication as directed by your doctor.



Do not skip your medicine.



Do not change the brand or dose of your thyroid medication without consulting your doctor.



If the symptoms persist or return, tell your doctor



Find time to take care of yourself.

## BE YOUR PHYSICIAN'S PARTNER IN HEALTHCARE.

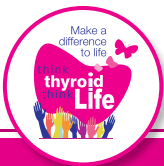


- Don't hesitate to ask your doctor questions about thyroid disorders.
- Observe good health practices: eat right and exercise.
  - Carry your medication with you when you see your doctor.
  - The more you and your doctor work as a team, the healthier you will be.

## BIBLIOGRAPHY



1. Unnikrishnan A.G., Prevalence of hypothyroidism in adults; An Epidemiology study in 8 cities of India; Indian j Endocr Metab 2013/17/647-52.
2. Fauci AS et al, Harrison's Principles of Internal medicine, 14<sup>th</sup> edition, New York, Mc Graw Hill 1998-2012.
3. Braverman LE et al, Utiger RD; Werner and Ingbar's: The Thyroid : A Fundamental and Clinical Text. 8th edition;Philadelphia, Pa:Lippincott Williams and Wilkins, 2000;488.
4. Ajmani et al, Prevalence of Overt and Subclinical Thyroid Dysfunction among pregnant women and its effect on Maternal and Fetal Outcomes, J Obstet and Gynaecol India, 2014, April, 64 (2); 105-10
5. ITS-FOGSI recommendations for the Management of Thyroid Dysfunction in Pregnancy, 20197.
6. Dhanwal DK, Thyroid Disease in Pregnancy; Experience from a large Indian Cohort, Thyroid Research and Practice, 2013, 10, Suppl S1:18-9
7. Jayakumar RV et al. ITS guidelines for hypothyroidism and diabetes. 2016
8. RV Jayakumar et al. ITS Guidelines for the management of depression and thyroid dysfunction. 2012
9. RV Jayakumar et al. ITS Guidelines for the Management of Dyslipidemia and Thyroid Dysfunction A Clinical Practice Guideline. 2016
10. Szczepanek-Parulska E et al. Anemia in thyroid diseases. Pol Arch Intern Med. 2017 May 31;127(5):352-360
11. Whelton PK et al. 2017 ACC/AHA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults. Hypertension. 2018 Jun;71(6):1269-1324
12. Stabouli S et al. Expert Rev Cardiovasc Ther. 2010;8(11): 559-65
13. Singla R et al. Indian J Endocrinol Metab. 2015 Jan-Feb; 19(1): 25-29.



## For more information on thyroid disorders

- Visit [www.thyroidindia.com](http://www.thyroidindia.com)
- Call the toll free number: **1800 121 2022**
- Download **ThyroApp**: An app to help you manage your thyroid disorders better. Accessible on iOS and Android platforms.
- If suggested by your doctor, get a Discounted Thyroid Test (TSH) at your doorstep (Offer available pan India):  
SMS **ABTSH**<space>**Pincode** to **9870666333**

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