

## **Thyroid stimulating hormone (TSH)**

TSH is a hormone which regulates thyroid function. TSH is produced by the pituitary gland. After production, TSH is acting on the thyroid gland and stimulates production of T4 and T3. Production of TSH from the pituitary gland is regulated by thyrotropin-releasing hormone (TRH), which is produced by the hypothalamus.

## **Why the TSH Test is Performed?**

TSH test is ordered if a patient has symptoms or signs of an overactive (hyperthyroidism) or underactive (hypothyroidism) thyroid gland.

Clinical signs of hypothyroidism:

- constipation
- lethargy
- cold intolerance
- bradycardia
- muscle cramp
- menorrhagia
- low appetite
- weight gain
- dry, itchy skin

Clinical signs of hyperthyroidism:

- emotional liability
- sweating
- weight loss despite increased appetite
- heat intolerance
- tremor
- tachycardia
- diarrhea
- unable to sleep

TSH is also used to monitor the treatment of the above conditions.

## **How the Test is Performed and How to Prepare for the Test?**

For the test a blood sample is needed without any special preparation. But some drugs can affect the level of TSH in the blood. Your health care provider may tell you to stop taking certain drugs before the test. Never stop taking any drugs without first talking to your doctor. Drugs that may affect the TSH level include:

- Amiodarone
- Dopamine
- Lithium
- Potassium iodide
- Prednisone

## **What Abnormal Results Mean?**

Normal values can range from 0.4 - 4.0 mIU/L.

Higher-than-normal TSH levels are most often due to an underactive thyroid gland (hypothyroidism). There are many causes of this problem:

- Hashimoto's thyroiditis
- Iodine deficiency

Lower-than-normal levels may be due to an overactive thyroid gland, which can be caused by:

- Graves disease
- Toxic nodular goiter

### **Alternative Names**

Thyrotropin

### **Useful Information**

Other tests that may be done at the same time include T4 and T3. Even without signs or symptoms of an underactive thyroid (hypothyroidism), patient needs to be followed closely by doctor if TSH level is over 3.5 mIU/L (called subclinical hypothyroidism).