

## **Anti-TSHR**

The thyroid gland produces hormones thyroxine (T4) and triiodothyronine (T3), which are vital in regulating the metabolism. Production of these hormones is stimulated by the thyroid stimulating hormone (TSH).

Anti-TSHR is an antibody against TSH receptor. Two types of Anti-TSHR are known:

- Thyroid stimulating immunoglobulin (TSI), which causes hyperthyroidism by binding to receptors and mimicking the effects of TSH.
- Thyrotropin-binding inhibitory immunoglobulin (TBII), which causes hypothyroidism by blocking TSH from binding to receptors.

This test is used for the quantitative determination of TSI in human serum.

### **Why the Anti-TSHR test is performed?**

The test is used to detect Anti-TSHR (thyroid stimulating immunoglobulin) in the serum. The test is performed when a person has signs or symptoms of Graves disease, toxic multinodular goiter and to monitor the effectiveness of anti-thyroid therapy.

The test is also done during the third trimester of pregnancy to predict neonatal Graves disease, because some women may continue producing Anti-TSHR even after clinical cure. Anti-TSHR are IgG antibodies, so they can cross the placental barrier and cause neonatal thyrotoxicosis.

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

A blood sample is drawn from a vein. No special preparation is needed for the test.

### **What Do the Abnormal Results Mean?**

Higher-than-normal levels may indicate:

- Graves disease
- Hashitoxicosis
- Neonatal thyrotoxicosis

Anti-TSHR is usually present in Graves disease. Elevated Anti-TSHR levels after a course of antithyroid drug treatment is predictive of Graves disease relapse. However, a normal Anti-TSHR test results are not predictive of prolonged remission.

### **Alternative Names**

Anti-TSHR (Thyrotropin Receptor Antibody) is also known as Anti-Thyrotropin, TRAb, Antibodies to TSH receptor, TSH Receptor (Thyroid-Stimulating Hormone Receptor) Antibody, Long-Acting Thyroid Stimulator (LATS), TBII (TSH-Binding Inhibiting Immunoglobulin or Thyrotropin-Binding Inhibitory Immunoglobulin), TSH Receptor Blocking Antibody, TSI (Thyroid stimulating immunoglobulin).

### **Useful Information**

If a patient is receiving therapy with high biotin doses, blood for the test should be drawn at least 8 hours after the last biotin administration.

No specimen should be drawn from patients receiving heparin treatment.