

### Thyroid Stimulating Immunoglobulin

**Effective Date: December 5, 2017**

Starting December 5, 2017, Beaumont Laboratory will offer testing for Thyroid Stimulating Immunoglobulin (TSI) useful in the diagnosis of autoimmune thyroid disease. Testing will be performed on the Siemens Immulite immunoassay platform.

**Background Information:**

The TSH receptor (TSHR) harbors a large extracellular domain. Patients with Graves disease commonly develop autoantibodies to epitopes present on the extracellular domain of the TSH receptor. Such autoantibodies can be stimulatory or inhibitory in nature. Those that are stimulatory (i.e. TSI), mimic TSH stimulation. In contrast to TSH, thyroid stimulating immunoglobulins are not subject to a negative feedback mechanism, and thus potentiate autoimmune thyroid disease pathogenesis.

**Clinical Utility- As a second-order test in autoimmune thyroid disease, including:**

1. To aid in the diagnosis of thyrotoxicosis if patient has ambiguous clinical presentation or thyroid scan is indeterminate/cannot be performed.
2. To support the diagnosis of clinically suspected Graves disease in patients with normal thyroid function tests.
3. As a prognostic marker for relapse of Graves disease.
4. To predict the risk of thyroid dysfunction in a fetus of a pregnant female with active or treated Graves disease.

**Specimen Collection Requirement:** One gold-top Serum Separator Tube (SST)

<u>Reference Value</u>	<u>Interpretation</u>
< 0.1 IU/L	Normal, no TSI detected
≥ 0.1 IU/L	Abnormal, TSI detected

**Special Consideration:**

A test cut-off of 0.55 IU/L improves the clinical sensitivity and specificity for Graves disease to 98.6% and 98.5%, respectively. Although not common, low TSI values may be observed in patients with non-Graves thyroid disorders, or other autoimmune diseases.

**Reference:**

Renato Tozzoli et al., *Clinical Chemistry Laboratory Medicine*, Volume 55, pages 58-64, 2017.

*If you have questions, please contact Client Services (1-800-551-0488, option 5).*

For additional information, access the Laboratory Test Directory at:

<http://beaumontlaboratory.com/test-lab-directory>

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**Date submitted:** November 27, 2017

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**Beaumont Laboratory**  
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