



# Understanding TSH Testing

## Patient Education Sheet

This sheet focuses on the uses of thyroid-stimulating hormone (TSH) testing in detection and treatment of thyroid disorders.

### Available Thyroid Tests

- There are several tests available to help diagnose thyroid disorders, including tests that measure thyroid hormone levels in the blood.
- The test most often used is the TSH test, which is a blood test that measures the concentration of TSH in the blood. By measuring TSH, the physician can detect the earliest signs of a thyroid disorder.

### What the TSH Test Can Reveal

- Because TSH is the pituitary gland's signal to the thyroid gland to produce more or less thyroid hormone, the TSH test can show whether the pituitary is overproducing or underproducing TSH.

### The Thyroid Gland—The Basics

- The thyroid is a butterfly-shaped gland located at the base of the neck that lies on either side of the windpipe. It produces and releases thyroid hormone.
- Thyroid hormone affects every cell in the body and controls many of the body's functions.
- The amount of thyroid hormone made by the thyroid gland is regulated by the pituitary gland and the hypothalamus in the brain.
- The pituitary gland releases TSH, which signals the thyroid to produce more thyroid hormone. When the pituitary gland senses that there is the right amount of thyroid hormone in the body, it will decrease thyroid hormone production.
- Physicians can measure the health of the thyroid gland by measuring levels of TSH.
- Too little thyroid hormone production causes a condition known as hypothyroidism; too much thyroid hormone production causes a condition known as hyperthyroidism.

### Hypothyroidism and Mild Thyroid Failure

- When a patient has hypothyroidism, he or she may feel tired and cold, have a slow heartbeat, or feel depressed.
- Mild thyroid failure is a mild form of hypothyroidism. In patients who have mild thyroid failure, the thyroid hormone levels are normal, but the TSH level is elevated.
- Patients with mild thyroid failure often do not show any obvious signs or symptoms, but untreated mild thyroid failure may lead to hypothyroidism.

### Hyperthyroidism and Mild Hyperthyroidism

- Patients with hyperthyroidism may feel jittery and may experience nervousness, a rapid heartbeat, or unexplained weight loss.
- Patients with mild hyperthyroidism have normal thyroid hormone levels and a decreased TSH level. Untreated mild hyperthyroidism can progress to hyperthyroidism, and may lead to potentially harmful consequences, such as cardiovascular disorders.

### Normal TSH Level Ranges

- TSH level is measured in microunits of TSH per milliliter of blood (mIU/mL).
- The normal TSH level range is 0.4 to 4.0 mIU/mL. A TSH level lower than 0.4 mIU/mL may indicate hyperthyroidism; a TSH level higher than 4.0 mIU/mL may indicate hypothyroidism.

### Other Uses for TSH Testing

- In addition to detecting thyroid disorders, TSH testing can be used to monitor thyroid function after treatment has begun.
- Because thyroid hormone replacement therapy is usually needed for a patient's entire life, testing of TSH level is needed periodically to monitor treatment. The TSH test is the most accepted method of monitoring change in thyroid function.

### More Information

- Patients who have further questions should contact their physician.