

Thyroid: How Does your Thyroid Gland Work?

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Many women want their thyroid function tested. In this, the first of a two part article, we will learn how the gland works. Next month we will talk about thyroid testing.

Where is the thyroid gland? Your thyroid gland is a small gland located in the front of the neck. It has two lobes, the left and the right, that lie alongside of the windpipe (trachea). The lobes are connected by a band of tissue, the isthmus. It is normally located just below the Adam's apple (larynx).

What is the gland supposed to do? Its function is to take iodine, found in many foods, and convert it into thyroid hormones: thyroxine (T4) and triiodothyronine (T3). Thyroid cells are the only cells in the body which can absorb iodine. These cells combine iodine and the amino acid tyrosine to make T3 and T4. Once the newly produced T3 and T4 are released into the blood stream they are transported throughout the body. Their purpose is to where they control metabolism, converting oxygen and calories to energy. Every cell in your body depends on the thyroid hormones to regulate metabolism. The normal thyroid gland produces about 80% T4 and about 20% T3, however, T3 possesses about four times the hormone "strength" as T4.

What controls the thyroid gland? The thyroid gland is under the control of the pituitary gland, a small gland located at the base of the brain. The pituitary gland produces Thyroid Stimulating Hormone (TSH) which stimulates the thyroid gland to produce hormones. If the T3 and T4 levels are low, the pituitary gland makes more TSH in an effort to make the thyroid gland produce more T3 and T4. If the thyroid makes more T3 and T4, the pituitary gland senses this and lowers the TSH back into the 'average' or normal range. If the thyroid is making too much T3 and T4, the pituitary

gland produces less TSH, giving the thyroid the message to slow down production of T3 and T4. **In other words, if TSH is high, your thyroid is low. If TSH is low, your thyroid levels are high.**

The pituitary gland itself is regulated by another gland, known as the hypothalamus. If the hypothalamus is damaged or diseased, there can not be good communication between the pituitary gland and the thyroid gland.