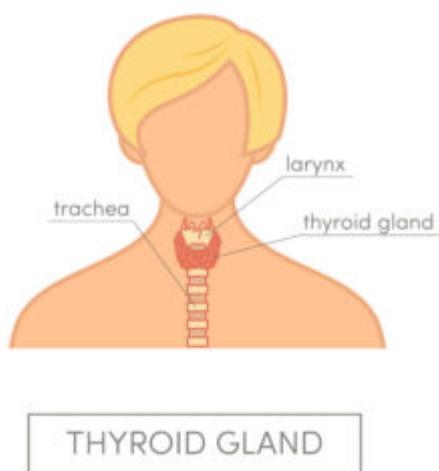


## Your thyroid gland

The thyroid gland is a small butterfly shaped gland with two lobes. It is situated in the front of your neck, just below the Adams Apple. The two lobes are joined together by tissue called the isthmus.



Thyroid gland anatomy of female.

The thyroid is one of the glands of the endocrine system. The thyroid gland has two main functions: the first function is to control metabolism. Metabolism is the rate at which all the chemistry of the body works. The second function is to control growth in early life.

A normal thyroid produces a number of different hormones. The main hormones are called thyroxine (T4) and triiodothyronine (T3). The thyroid produces approximately 80% T4 and 20% T3. The thyroid also produces T2 and T1 in very small amounts but their role is not yet well understood. T4 is generally considered to be a pro-hormone because it is inactive and only becomes active when converted to T3. However, some researchers believe that T4 does, in fact, have a function.

T3 is an active hormone and does all the work of regulating the body's metabolism. The tissues are unable to use T4, so an enzyme called 5'-deiodinase converts it to T3. This conversion takes place in the body's cells and tissues, mainly in the liver. Problems with the liver can upset/affect the body's conversion of T4 to T3 and can cause problems for the thyroid.

The thyroid needs iodine to make thyroid hormone. Iodine is found in fish, shellfish, cereals and grains and vegetables (although levels vary depending on the amount of iodine in the soil where the plants are grown). There is also iodine in cow's milk.

Your body also needs different amino acids to make thyroid hormone (amino acids are the building blocks of protein), especially the amino acid, Tyrosine. Tyrosine is found in soy, chicken, turkey, fish, peanuts, almonds, avocados, bananas, milk, cheese, cottage cheese, yoghurt, lima beans, pumpkin seeds and sesame seeds.

Selenium is needed for conversion of T4 to T3. If your diet does not contain enough selenium, you may have a poor conversion of T4 to T3. Selenium can be found in meat, fish and nuts.

Thyroid problems often run in families and can happen at any age. Things can go wrong with the thyroid in two ways:

## **Hyperthyroidism**

When the thyroid produces more thyroid hormone than it should it causes the metabolism to run too fast. This is called hyperthyroidism or an overactive thyroid. The autoimmune form of an overactive thyroid is called Graves' disease.

## **Hypothyroidism**

When the thyroid produces less thyroid hormone than it should it causes the metabolism to run too slow. This is called hypothyroidism, myxoedema or an underactive thyroid. The autoimmune form of an underactive thyroid is called Hashimoto's disease.

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