

NEWSLETTER
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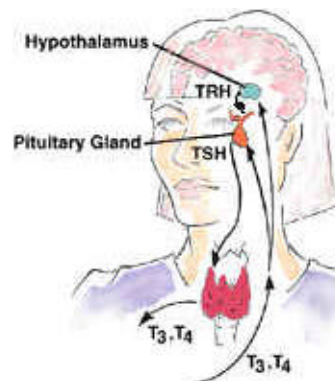
Weight Problems & Your Thyroid

The **thyroid gland** is a butterfly-shaped hormone factory located in the neck, just below the Adam's apple. As part of the **endocrine system**, which regulates and integrates the body's metabolic activities, this powerhouse produces hormones that greatly affect human metabolism.

We hear the word metabolism bandied about frequently, but what exactly is it?

Metabolism is the series of chemical changes by which organisms break down food to use as energy, build new tissues, or eliminate as waste products. People with "fast" metabolisms may process their nutrients so completely into energy that there is not much material left over for the creation of new tissue: therefore, they "burn" their calories and tend to have difficulty gaining weight even when they need to. People with "slow" metabolisms don't process their food as efficiently and may tend to store the excess fuel inside their tissues, leading to lower energy and weight gain. The thyroid plays an important role in these metabolic processes, and when the thyroid is not functioning properly it can result in either a fast metabolism (**hyperthyroid**) or a slow one (**hypothyroid**).

The thyroid takes orders from the **pituitary gland**, which in turn is subject to the **hypothalamus**. It all looks something like this: The hypothalamus, which is in the brain just above the pituitary gland, secretes thyrotropin-releasing hormone (TRH). The pituitary gland reacts to the TRH and releases thyroid-stimulating hormone (TSH). TSH senses the thyroid hormone levels in the body and triggers the thyroid to release thyroid hormone (TH) in the forms of triiodothyronine (T3) and thyroxine (T4). These hormones affect the body's metabolic rate. T3 is the more active hormone, while T4 must be converted into T3 to really impact metabolism. This conversion takes place in several organs including the liver, brain and the thyroid itself. The hypothalamus and pituitary gland sense the levels of T3 and T4 in the bloodstream and then merrily start the process all over again.



From the number of organs involved in this complex release and regulation of hormones, you can see that there are many places along the chain where a weak link could affect the entire process. A problem anywhere along the line can lead to over- or underproduction of thyroid hormone (TH), resulting in hyper- or hypothyroid, respectively.

Common dysfunctions of the endocrine system are classified as ***hypo-*** (under) and ***hyper-*** (over) function, inflammation and tumor. The source of hypo- and hyperfunction may originate in the hypothalamus, or in the pituitary or thyroid glands. For instance, hypothyroidism may result from an excess of TRH from the hypothalamus, of TSH from the pituitary gland, or of TH from the thyroid itself.

Hyperthyroidism results from thyroid overproduction. The most common form is ***Grave's disease***, which can cause increased T3 and T4 production, enlargement of the thyroid gland resulting in goiter, difficulty sleeping, accelerated heart rate, fatigue, and manic-depressive behavior. Oftentimes hyperthyroid people exhibit a slight tremor in their hands. Because protein and fat metabolism are accelerated, ketones may build up, resulting in ***ketosis***. Some people are afflicted with ***thyroid storms***: extreme overloads of thyroid hormones which can skyrocket the heart rate as high as 300 beats per minute, potentially resulting in arrhythmia or heart attack.

Low thyroid production leads to ***hypothyroidism***. Symptoms are gradual: weight gain or loss, brittle nails, gastrointestinal sluggishness, intolerance to cold, low immune function, low heart rate and blood pressure, hoarse voice, and infertility are all possible. Hypothyroid people are chronically sleepy but never feel truly rested after sleeping. When awake they experience fatigue, apathy and "brain fog" (short-term memory problems, attention deficits), which leads many to misdiagnose their condition as depression. Indeed, low levels of T3 can result in depression. ***Hashimoto's thyroiditis*** is the most common form of hypothyroidism, presenting with a large thyroid gland (goiter) that becomes nonfunctional. The symptoms of severe hypothyroidism are similar to Alzheimer's disease: memory loss, confusion, slowness, paranoid depression and even hallucinations.

Some drugs also cause temporary TH imbalances. Caffeine and other stimulants interfere T3 while in the body. Smoking depresses TH levels and fosters a chronic hypothyroidism. ***Ma Huang (ephedra)*** is a Chinese herb that helps to dilate the bronchi, making it useful for those with breathing problems. Unfortunately it has also been abused and misused in weight-reduction products such as Metabolite because it increases metabolism. Use of ephedra can contribute to extreme highs or lows of TH, leading to undesirable and sometimes life-threatening consequences.

Treatments for hyperthyroidism include administering radioactive iodine and surgical removal of the thyroid gland, which often results in hypothyroidism.

Conventional treatment for hypothyroidism usually involves synthetic T4 hormone replacement -- Synthroid and Levothyroid are two examples. These are to be taken for life, and the body must work to convert these synthetic forms of T4 to T3 and other metabolites. There are natural alternatives, however, to hypothyroid treatment: glandular concentrates derived from the thyroid gland of the pig are available, including Armour Desiccated Thyroid Hormone, Nathroid and Westroid. Because these are organic forms of T4/T3 and not synthetics, they are more easily absorbed and used by the body.

Supplementation is also beneficial to thyroid health. Vitamins A, B complex, B12, C and E are recommended, as well as minerals magnesium, manganese, selenium and zinc. Be careful not to supplement with vitamin A, though, if you have thyroid cancer or suffer severe thyroid deficiency. Deficiencies in any of these minerals can prevent the conversion of T4 to T3. Sufficient protein, iodine and especially the amino acid tyrosine are necessary to manufacture T4 in the thyroid gland. Soy and coenzyme Q10 are known to boost thyroid output. DHEA, a precursor of sex hormone, enhances the body's metabolic function and also may be deficient in those with hypothyroid.

The following Chinese herbal formulas are also helpful in maintaining a healthy thyroid:

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| * Jin Gui Shen Qi Wan | * Fu Fang Hai Zao Wan |
| * Da Bu Xin Wan | * Nei Xiao Luo Li Wan |
| * Long Dan Xie Gan Wan | * You Gui Wan |

The Chinese herbs that help with obesity related to thyroid problems are:

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| * Bu Zhong Yi Qi Wan | * Fang Feng Tong Sheng Wan |
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Melatonin, thyroid, DHEA, sex hormones and human growth hormone (HGH) all decrease as the body ages. If they are not replaced, premature aging may affect quality of life; however, too much replacement is also unhealthy. This is why balancing the system with proper supplements and acupuncture is essential. Acupuncture treatment is one of the best ways to regulate the autonomic nervous system. Herbal supplements are most beneficial to overall health, and all hormones should be balanced in order to live a long and healthy life.

