

OPTIMAL HEALTH UNIVERSITY™

Presented by Dr. Wayne Terai

Hypothyroidism

Hypothyroidism (underactive thyroid) is a condition in which the thyroid gland doesn't produce enough of certain important hormones. Women, especially those older than 50, are more likely to have hypothyroidism.

Hypothyroidism is traditionally treated with synthetic hormones, but Dr. Terai wants patients to know that this treatment has come under fire in recent years. Researchers are discovering that the risks of hormone replacement therapy for hypothyroidism do not necessarily outweigh its benefits for all patients. Dr. Terai also wants patients to know about recent research into causes of hypothyroidism and alternative treatments, including exciting new results from mind/body therapy, which incorporates chiropractic.

Symptoms of Hypothyroidism

Since the extent of hormone deficiency varies widely among hypothyroidism patients, there are also a wide range of symptoms. However, in most cases, problems develop slowly, often over a number of years.

Dr. Terai cautions patients that early symptoms may be limited to only fatigue and sluggishness. Later symptoms include:

- Increased sensitivity to cold
- Constipation
- Pale, dry skin
- A puffy face
- Hoarse voice
- Elevated blood cholesterol level
- Unexplained weight gain
- Muscle aches
- Muscle tenderness
- Joint pain or stiffness
- Swelling in joints
- Muscle weakness
- Heavier menstrual periods
- Brittle fingernails and hair
- Depression

When hypothyroidism isn't treated,

symptoms can become more severe. Constant stimulation of the thyroid to release more hormones may lead to an enlarged thyroid (goiter).

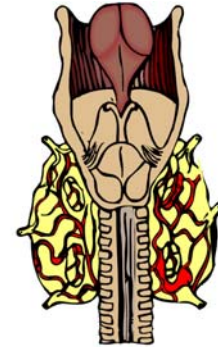
Advanced hypothyroidism, known as myxedema, is rare, but can be life-threatening.

Causes of Hypothyroidism

The thyroid gland is located in the front of the neck just below the voice box (larynx). It releases two hormones that control metabolism: thyroxine (T4) and triiodothyronine (T3).

The pituitary gland and the hypothalamus in the brain control the release of T3 and T4. Thyroid disorders may be caused by defects in the thyroid gland itself or in the pituitary or hypothalamus.

The most common cause of hypothyroidism is an autoimmune disease (Hashimoto's thyroiditis) in which the immune system attacks the thyroid gland. A less common cause of hypothyroidism is a pituitary gland disorder (secondary hypothyroidism). In this case the pituitary gland fails to release a hormone that stimulates the thyroid gland.



Back view Thyroid Glands

Other causes include congenital (birth) defects, inflammatory conditions, radiation to the gland and surgical removal of the gland.

The trace mineral iodine — found primarily in seafood, seaweed, plants grown in iodine-rich soil and iodized salt — is essential for the production of thyroid hormones.

Medical Treatment

Traditional medical treatment of hypothyroidism involves the use of synthetic hormones to replace those the thyroid is no longer producing. This treatment is accompanied by some serious side effects, and its risks and benefits must be carefully weighed.

Hormone replacement is particularly controversial for those with subclinical hypothyroidism, or those whose thyroid hormone levels are only slightly low. In most cases individuals with subclinical hypothyroidism don't have any symptoms.

A recent comprehensive review study compiled by the Cochrane Library explains: "The prevalence of subclinical hypothyroidism is 4% to 8% in the general population, and up to 15% to 18% in women who are over 60 years of age.

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“There is considerable controversy regarding the morbidity, the clinical significance of subclinical hypothyroidism and if these patients should be treated.”

This study then goes on to examine the effects of thyroid hormone replacement for subclinical hypothyroidism through a literature review. The authors conclude: “levothyroxine replacement therapy for subclinical hypothyroidism did not result in improved survival or decreased cardiovascular morbidity. Data on health-related quality of life and symptoms did not demonstrate significant differences between intervention groups.” (*Cochrane Database Syst Rev* 2007;18:CD003419.)

Mind-Body Treatment

Promising research into alternative treatments for hypothyroidism continues. For instance, treating hypothyroidism with a form of mind-body chiropractic intervention called neuro-emotional technique (NET) has led to some exciting results. A late-breaking study looked at two individuals who “had been diagnosed with primary hypothyroidism by independent medical and laboratory based assessment, of which conservative management had not resolved the symptoms. Both cases underwent a schedule of NET as a modality to treat their hypothyroidism.”

After receiving NET, researchers measured both the patients’ thyroid hormone levels and more subjective measures, such as feelings of tiredness and general well being. The researchers found that: “In both cases, there were improvements in TSH and T(4) levels, both returning to normal levels.”

The study concludes: “As the standard medical model is associated with some adverse effects such as long-term medication use and potential side effects, all natural, non-invasive approaches to management should be reviewed. Further research into this

mind-body therapy is recommended to evaluate its potential effectiveness for this common condition.” (*Complement Ther Clin Pract* 2009;15:67-71.)

The Chemical Connection

Recent research points to a link between thyroid problems, including hypothyroidism, and exposure to certain chemicals. A 2008 study analysis states that “in recent studies, we and others detected, within the thyroid hormone axis, multiple molecular targets of disruption by EDC [endocrine disrupting chemicals], which are used in cosmetics, as pesticides or plasticizers or consumed as plant-derived compounds with the diet or with nutritional supplements. Several of these agents exert adverse effects on thyroid growth and function in animal or in vitro cellular models.” (*Ann Endocrinol* 2008;69:116-22.)

Another recent study found that “there is substantial evidence that polychlorinated biphenyls, dioxins and furans cause hypothyroidism in exposed animals and that environmentally occurring doses affect human thyroid homeostasis. Similarly, flame retardants reduce peripheral thyroid hormone (TH) levels in rodents, but human studies are scarce.” (*Eur J Endocrinol* 2006;154:599-611.)

Finally, a third study uncovered that “several recent studies show that TRs [thyroid hormone receptors] may be unintended targets of chemicals manufactured for industrial purposes to which humans and wildlife are routinely exposed. Polychlorinated biphenyls, polybrominated diphenyl ethers, bisphenol-A, and specific halogenated derivatives and metabolites of these compounds have been shown to bind to TRs and perhaps have selective effects on TR functions. A number of common chemicals, including polybrominated biphenyls and phthalates, may also exert such effects.” (*Thyroid* 2007;17:811-7.)

These studies reinforce the need to be aware of your exposure to chemicals, especially those mentioned in the studies above.

Diet

Scientific evidence demonstrates a link between diet and thyroid function. Although scientists are only beginning to uncover links between specific foods and thyroid problems, they have known for years that diet is in some way tied to thyroid function.

This link was made especially clear in a fascinating study, which looked at a group of nomadic people in an area of Africa plagued by severe iodine deficiency and, therefore, a high rate of goiter. This one group of nomads, the Bororo shepherds, did not suffer from the same thyroid issues affecting the rest of the people living in the area. In fact, the prevalence of goiter among the Bororo was only 17.1 percent, compared with 76.9 percent among the other inhabitants of the same area.

The researchers attributed the difference to a markedly different diet between the two groups. They conclude: “A minute difference in iodine deficiency between two populations induces totally different patterns of goiter and thyroid function. The reason for such a contrast probably involves differences in diet.” (*Eur J Endocrinol* 1998;138:681-5.)

Another recent analysis found a link between vitamin B¹² deficiency and hypothyroidism. The researchers concluded: “There is a high (approx 40%) prevalence of B¹² deficiency in hypothyroid patients. Traditional symptoms are not a good guide to determining presence of B¹² deficiency. Screening for vitamin B¹² levels should be undertaken in all hypothyroid patients, irrespective of their thyroid antibody status. Replacement of B¹² leads to improvement in symptoms.” (*J Pak Med Assoc* 2008;58:258-61.)

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