

THE BETTER HEALTH NEWS

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Iodine is necessary to produce thyroid hormones. A review article appearing in the *Lancet* (March 28, 1998;351:923-924) pointed out that 1.5 billion people were at risk for brain damage due to lack of iodine.

An article in the *Journal of Clinical Endocrinology and Metabolism* (1993;77(3):587-591) summarized the health problems brought on by iodine deficiency. These include cretinism, goiter, intellectual disability, growth retardation, neonatal hypothyroidism, increased miscarriage, increased perinatal mortality and increased infant mortality. Conversely too much iodine can create hyperthyroidism.

There may be a connection between low birth weight and iodine deficiency, according to research appearing in *Pediatrics* (October, 1996;98(4):730-734). Research appearing in the *American Journal of Clinical Nutrition* (2009; 90(5): 1264-71) looked at iodine status and its relationship to brain development. The subjects were 184 children (between the ages of 10 and 13) with mild iodine deficiency. In the randomized, placebo-controlled study, the subjects were given either 150 mcg of iodine or a placebo each day for a period of 28 weeks. Those given the iodine had improved iodine status and improvement on two of four cognitive tests. Research appearing in the *American Journal of Clinical Nutrition* (May, 1996;63(5):782-786)

found a connection between low iodine levels in children and slow learning.

Iodine supplementation may be useful in the treatment of fibrocystic breast disease. The *Canadian Journal of Surgery* (October 1993;36:453-460) found that women supplemented with iodine had greater improvement in their symptoms when compared to controls. Earlier animal research appearing in the *Archives of Pathology and Laboratory Medicine* (November, 1979;103:631-634) looked at rats who were given sodium perchlorate. Sodium perchlorate blocks iodine and the researchers were able to mimic iodine deficiency in the rats--creating fibrocystic breast disease in the rats.

Iodine is especially important to pregnant women and children. Iodine is classified chemically with the halogens--it is similar to fluorine, bromine and chlorine. These other halogens can displace iodine; so drinking water with fluorine and chlorine may increase the need for iodine. Bromine is used in preservatives, like brominated vegetable oil (BVO), and bread. It should be avoided. Iodine requirements are 150 mcg per day for adults and 200 mcg per day for pregnant and lactating women. Some physicians believe that these numbers are too low.

BUT THE DOCTOR SAID MY THYROID WAS “FINE”

You’ve seen this person; she (usually a she) is tubby, tired and depressed. Her hair is brittle, skin is dry and she can’t seem to lose weight no matter what she does. You look up hypothyroidism in the medical dictionary and her picture appears next to the description of the condition. She cries for no reason, catches a lot of colds, her ankles swell and she is puffy under the eyes. You notice that the lateral third of her eyebrows is missing. She may or may not be taking antidepressants or cholesterol medication.

She has had her TSH tested and her thyroid was pronounced “healthy”. TSH is a pituitary hormone that stimulates the thyroid gland—levels are used to screen for thyroid problems. *The British Medical Journal* [BMJ 2000;320:1332-1334 (13 May)] published research examining the flaws in diagnosing hypothyroidism. The authors concluded that there are indeed flaws with the way that we diagnose hypothyroidism. First of all, the research is lacking that shows us the relative importance of lab tests and symptomatology in diagnosing the thyroid. TSH production is affected by the level of thyroid hormone, but it is also affected by other things. We

don’t fully understand how various illnesses affect TSH and the thyroid hormones. There is also a need to consider the possibilities of false positive and false negative results when looking at lab tests related to the thyroid.

Dr. Broda Barnes felt that the basal body temperature should be between 97.8 and 98.2 degrees. If a patient has a low basal body temperature and hypothyroid symptoms, that is justification to treat the thyroid. The problem is that many things can cause a low temperature. Using basal body temperature and symptoms to make this diagnosis is also unsatisfactory.

Many health problems are linked to hypothyroidism. Many people on antidepressants should be getting thyroid support. Research appearing in the *American Journal of Psychiatry* (March 1993;150:3:508-510) suggests that the thyroid may be involved with some cases of depression. The frequency of depression over the course of a lifetime was higher in the group with subclinical hypothyroidism.

Research appearing in the *Annals of Internal Medicine* (2000; 132

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(4):270-8) shows that subclinical hypothyroidism and thyroid autoimmunity can also increase the risk of heart disease. Hypothyroidism can be responsible for miscarriages. If an expectant mother has hypothyroidism and doesn't miscarry, her baby will have a lower IQ than if her thyroid was normal [According to a study published in the *New England Journal of Medicine* (1999;341:549-555, 601-602),]. Problems losing weight, dry skin and immune system problems may also have the thyroid at their root.

Fortunately, a number of doctors have been wrestling with this problem and there are now ways to combine lab information with symptoms and come up with a diagnosis—and a safe and reasonable treatment. When you treat with nutrition, you are using a therapy that has great potential to get good results without causing the same kind of risk to the patient that drug therapy poses.

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LAB: READ BETWEEN THE LINES

Unfortunately, many cases of hypothyroidism are missed because lab analysis is often inadequate. Lab interpretation and the supplement suggestions indicated below have been obtained from the writing of Dr. Harry Eidenier, an expert in blood chemistry analysis.

TSH If the TSH (thyroid stimulating hormone) levels are lower than 2.0 (in the presence of symptoms and low basal body temperature), it may indicate that the thyroid problem is secondary to hypofunction of the anterior pituitary. This is *secondary* hypothyroidism. In the absence of symptoms, this is not the case.

TSH If the TSH is greater than 2.0 (in the presence of symptoms), the problem is with the thyroid itself. The higher the value, the more likely that this is the case. When TSH values are 3.0 or more, it is very common for the patient to have symptoms and come into the office saying, "The doctor said my thyroid is fine." Most doctors won't diagnose the patient as being "borderline" hypothyroid until the TSH gets to be above 7.0. Support for primary thyroid hypofunction is needed. There are a number of nutrients that could help. We will mention a few here, but the decision should be made by a trained professional. Iodine, tyrosine, and even thyroid glandular tissue has been used to help these patients.

T4 If the T4 is less than the middle of the lab range (in the presence of

symptoms and low temperature), there is a good chance that the patient needs iodine and tyrosine.

T3 If the T3 (free, total or uptake) is below the middle of the reference range and the T4 is above the middle of the reference range, it is a conversion problem. T4 is converted by the body to the more active form, T3. In the presence of symptoms, this needs to be addressed. High stress, nutrition and other issues may prevent the conversion from taking place. A health professional trained in nutrition may recommend adrenal support, trace minerals (especially selenium), vitamin B₁₂ or other nutrients. The cause can be from too much stress (cortisol), too much estrogen or a lack of nutrients needed for the conversion. Another test, RT3, can show the presence of reverse-T3, which is an isomer of the active form of thyroid hormone. Reverse T3 is not active, and can make the thyroid panel look normal in a patient that has symptoms of hypothyroidism.

When diagnosing hypothyroidism it is important to look at all of the lab values and to consider the symptoms. Simply testing TSH and looking at "normal" or "abnormal" values is not good enough. Find a practitioner who does more complete lab work and who listens.

**Health is the
greatest gift,
contentment
the greatest
wealth,
faithfulness the
best
relationship.**

Buddha

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SELENIUM AND THE THYROID

An article reviewing the relationship between selenium and thyroid function appeared in *Endocrine Reviews* (1992;13(2):207-220). The thyroid gland produces T4, or thyroxine, which is converted to the more active form of the hormone, T3. Rats fed a selenium-deficient diet over a period of four to six weeks had high levels of T4 and low levels of T3. The difference between the two levels of hormone increased as time progressed on the selenium-deficient diet. Thus indicating that selenium is necessary to convert thyroxine to a more active form.

Thyroid stimulating hormone (TSH) is produced by the pituitary gland to get the thyroid gland to produce its hormones. TSH levels become elevated in hypothyroidism. TSH levels doubled

on the selenium deficient diet. Pituitary growth hormone decreased as well.

Cretinism is due to hypothyroidism in the newborn. One of the implications is mental retardation. When cretins are supplemented with selenium, T3 and T4 levels actually decrease, but iodine supplementation helps. The authors recommend supplementing with iodine before introducing selenium in this instance.

Please be aware that selenium, when taken in excess can be toxic. Symptoms of selenium toxicity include nausea; vomiting; nail discoloration, brittleness, and loss; hair loss; fatigue; irritability; and foul breath odor (often described as “garlic breath”).