



THYROID DISEASE

The thyroid hormones are involved in the control of the body's metabolism. They are synthesized by several enzymatic conversions involving iodine, under the control of a feedback mechanism involving the hypothalamus and Pituitary gland. The hormone T4 circulates in the bloodstream and regulates this feedback mechanism, but isn't itself active until converted into T3. This conversion occurs in the tissues – particularly the liver and kidneys under the influence of several sub-types of the 5-deiodase enzyme, the most active of which (type 1 enzyme) contains a selenocysteine molecule i.e requires selenium to function.

The thyroid can be involved in a number of disease processes, which may abnormally increase (hyperthyroidism) or decrease (hypothyroidism) production of these hormones. In the former case patients are typically hyperactive, hot and sweaty, irritable and underweight, while hypothyroid patients are typically slow and sluggish, constipated, overweight, cold, mentally dull and depressed, with dry skin and thinning hair.

An underactive thyroid (hypothyroidism) can have a number of causes including:

- iodine deficiency
- autoimmune
- congenital
- drug-induced

A number of other factors can interfere with hormone levels and/or activity and can therefore affect thyroid function including:

- environmental toxins such as pesticides, fluoride, heavy metals
- radiation
- infections
- selenium deficiency
- high oestrogen states (including pregnancy)
- chronic stress – both physical and mental

It has been suggested that the current diagnosis and treatment of hypothyroidism is inadequate due to the fact that measuring TSH (thyroid stimulating hormone) alone – an indirect measure of thyroid function – doesn't accurately reflect the clinical picture in a lot of cases eg

- patients with chronic fatigue – shown as a group to tend to have lower thyroid function than the normal population by Skinner and Colleagues from Birmingham.
- patients who cannot adequately convert T4 into T3 the active hormone
- Patients who convert T3 into the inactive 'reverse T3' and thus have a relative deficiency of the active hormone (Wilson's Syndrome).

Skinner & colleagues in Birmingham have conducted trials showing that such patients who are 'biochemically normal' but 'clinically hypothyroid' have a favourable clinical response to thyroid replacement. The implication therefore is that a group of individuals may be being inadequately diagnosed and treated.

At the Dove Clinic we offer the following tests for thyroid function:

- TSH
- Free T4
- Free T3
- Reverse T3 (rT3)
- Thyroid antibodies
- Red cell selenium
- Urinary T3 (Recent studies show that symptoms of hypothyroidism correlate best with 24 hour urinary free T3. This test can be done at a Laboratory in Holland)

Treatment is based on these results, but also takes account of the patient's symptoms. It is important to 'treat the patient as well as the laboratory'. We use a porcine thyroid extract called 'Armour Thyroid' containing both T4 and T3, and will prescribe additional T3 if indicated. Further tests and treatment may be recommended if appropriate.

ADRENAL DYSFUNCTION AND ITS RELATIONSHIP TO THYROID DISORDERS

Adrenalin is produced in the adrenal medulla (that is the centre of the adrenal gland which sits on top of the kidneys) and the chromaffin ganglia which are situated along the sympathetic nerve trunk. They are called chromaffin ganglia because they can be stained using chromium dyes.

Adrenalin together with Noradrenaline belongs to the group of biologically active compounds called catecholamines. Noradrenaline is also produced in the central nervous system as well as in the sympathetic collections of nerves known as ganglia. It is also produced in the mucous membranes of the small intestine and other organs.

Adrenalin is the most important antagonist of insulin in the glucose cycle. Insulin builds glucose into the cells in the form of glycogen, and adrenalin causes its release using a process called glycogenolysis (the breakdown of glycogen in the absence of oxygen).

Glycogen in muscles can also be mobilised by adrenalin. This is by the process of glycolysis, which is the breakdown in a non-oxygen environment of glycogen to dextrorotatory lactic acid. Excess accumulation of glycogen in the cells encourages the formation of laevorotatory lactic acid, which is toxic and promotes cell division. It encourages the cell to convert into a fermentational metabolism, which occurs without any oxygen being present, this is known as anaerobic. This is connected with insulin resistance, sometimes called Syndrome X, commonly called hypoglycaemia. Insulin resistance is associated with the doubling of the risk of dying from cancer (Lancet Oncology, Volume 4, August 2003, page 454, "Is there a Glucose Tolerance Link to Cancer?").

Adrenalin is the fight and flight hormone, and it promotes the breakdown of glycogen and thus ensures the supply of glucose if combat and escape is necessary. It also stimulates the formation of particular subsets of white cells which are required in cases of infection and, indeed, in cancer.

In our thyroid cases, we test adrenalin in a late night specimen of urine, using high performance liquid chromatography. We found 95% of patients suffering from thyroid disorders to only have a trace of adrenalin detectable. We find that treating this, using dextrorotatory lactic acid is an essential part of the process of helping the thyroid to function normally. Without this, it is often difficult to get normal thyroid function. Giving this preparation takes many months, in order to produce its effect, simply because the levels of adrenalin we are measuring are, in some cases, 2% or 3% of normal.

In very severe cases, we have to use high dose intravenous vitamin C with magnesium, selenium, chromium and zinc and also two particular amino acids, glutathione and taurine, and B Group vitamins, in a course of 8 infusions as a detoxification treatment. This often will start things working correctly, and then the patient will start responding normally to adrenal support and thyroid supplementation.

In our experience, the use of adrenal glandulars as preparations taken orally, don't work.

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