

# ***Patient Advocates Ltd***

## ***Natural Hormone Therapy***

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## **THE THYROID**

The thyroid gland is a small butterfly-shaped gland in the neck, it weighs less than 30g or an ounce and its secretions control human body metabolism which is the way we convert food and uses energy in cells. This key controller of human metabolism and function produces four forms of thyroid hormones, three of which are known to be active molecules.

The Thyroid hormones are described as T1, T2, T3 and T4 (for simplicity). Iodine is very important as it is a component of the thyroid molecules. T3 has three iodine molecules and T4 has four. In understanding that iodine is part of the thyroid hormone you are better able to understand that it is critical for effective thyroid function. Low iodine causes the “foggy thinking” associated with low thyroid function. New Zealand soil is deficient in iodine.

If the human soul had a molecular structure, it would be a thyroid hormone. Without it our minds, the source of thought, perception, emotion, memory, imagination and love would never work and we would simply revert to uninteresting blobs on a gray landscape. T3 or tri-iodothyronine contains 80% of thyroid hormone activity and T4 or thyroxine contributes just 20% activity. T3 works in all human cells as the spark that creates metabolism. It functions in the synapse or junctions of nerves, particularly in the brain. It fires the furnaces (mitochondria) in cells, particularly in the brain. In so doing it controls our serotonin hormone which is another “feel good hormone” we rely on for emotional wellbeing. If T3 is not available to nerves then depression and anxiety with the destruction of mood and energy are invariably a consequence.

### **Causes of thyroid hormone deficiency**

- lack of pituitary gland stimulation in the brain
- defective hormone manufacture in cells
- impaired cellular conversion of thyroid hormone T4 to T3
- autoimmune causes

### **Categories**

- primary hypothyroidism
- secondary hypothyroidism
- cellular hypothyroidism

Most estimates of the incidence of hypothyroidism are based on levels of thyroid hormones in the blood. This results in a large number of people with mild hypothyroidism going undetected.

### **Incidence of hypothyroidism using blood results**

- 1 – 4% of adults in New Zealand have moderate to severe hypothyroidism
- 10 – 12% have mild hypothyroidism which steadily increases with age

There are degrees of non performance of the thyroid gland. Sometimes we do not realise what the cause of our low energy and fatigue is. We may have multiple symptoms that represent classical thyroid deficiency, which can in the long term be life threatening, and yet we and our doctor still do not know the cause. The following is a list of some symptoms which, if you have low thyroid function, you may recognise.

<b>Alopecia/hairloss/balding</b> <b>Anaemia</b> <b>Auto-immune diseases eg coeliac's, polymyalgia</b> <b>Breast cancer</b> <b>Brittle nails</b> <b>Chronic fatigue,</b> <b>Coarse hair,</b> <b>Cold feet and hands,</b> <b>Constipation,</b> <b>Depression</b> <b>Diabetes,</b> <b>Difficulty in swallowing</b> <b>Diminished sweating,</b> <b>Dry, coarse, cold, pale skin</b> <b>Excessive and/or painful menstruation</b> <b>Fibromyalgia,</b> <b>Headaches</b> <b>Heart disease and palpitations</b> <b>High blood pressure and cholesterol</b> <b>Hoarseness,</b> <b>Infertility</b>	<b>Joint pains</b> <b>Laboured difficult breathing,</b> <b>Lethargy,</b> <b>Loss of appetite,</b> <b>Loss of outer third of eyebrow.</b> <b>Lowered immunity</b> <b>Muscular weakness,</b> <b>Nervousness</b> <b>Osteoporosis</b> <b>Pernicious anaemia, (B12 deficiency)</b> <b>Poor memory,</b> <b>Poor sleeping patterns and quality</b> <b>Psoriasis</b> <b>Slow movement,</b> <b>Slow speech,</b> <b>Swelling of face and eyelids,</b> <b>Swollen feet,</b> <b>Thick tongue,</b> <b>Vitiligo (loss of pigment in skin)</b> <b>Weight gain,</b>
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### Diagnostic error

Before the use of blood measurements, it was common to diagnose hypothyroidism based on basal metabolic temperature (the temperature of the body at rest) and Achilles reflex time (reflexes are slowed in hypothyroidism). With the advent of sophisticated laboratory measurement of thyroid hormones in the blood, these "functional" tests were not used. However it is now known that routine blood tests may not be sensitive enough to diagnose all cases of milder forms of hypothyroidism. As mild or subclinical hypothyroidism is the most common form, many people are going undiagnosed. The evaluation of basal temperature is probably the most sensitive functional test of thyroid function.

**Blood results: Normal range is**

<b>T4</b>	<b>9.0 - 19.0</b>	<b>Preferred range</b>	<b>14.0 - 19.0</b>
<b>T3</b>	<b>2.5 - 5.5</b>	<b>Preferred range</b>	<b>4.0 - 5.0</b>
<b>TSH</b>	<b>0.4 - 4.0</b>	<b>Preferred range</b>	<b>&lt;1.5</b>

### Functional hypothyroidism

As early as 1959 a recognised authority on the thyroid gland A S Jackson published a paper declaring that low thyroid function is the most common disease seen by doctors and the disease most missed. Langer quotes that the situation is much the same today except that there are more tests, more misdiagnoses, and more people.

If thyroid activity is measured by the functional temperature test as described by Broda Barnes, Stephen Langer and other medical authors, rather than blood thyroid hormone levels, the incidence is as high as 25%. There are several reasons why functional tests show a greater incidence of low thyroid than blood tests, the main reason is that blood measures T4 which accounts for 90% of the hormone secretion of a normal thyroid, this is the inactive hormone. It is T3 or tri-iodothyronine which cells make from T4 which affects cells the most. If T4 cannot be converted into T3 a person can have normal levels in the blood but be thyroid deficient. The measurement of T3 has been shown to miss 50% of patients.

The best way to assess thyroid function is measuring its affects on the body through measurement of metabolic rate which is controlled by temperature regulation by the thyroid gland. Barnes in over 40 years of practise confirmed the original work regarding the efficacy of measuring basal metabolic temperature and thus the body's response to thyroid hormones, optimal TSH blood level is 2.0. Anything greater than 2.0 is tending to hypothyroidism. (American Assoc clinical Endocrinologists) Normal basal temp is 36.5, temperatures consistently lower than this indicate low thyroid function.

Ref: Hertog Theiry MD: The Hormone Solution  
Langer Stephen E MD: Solved the Riddle of Illness  
Arem Ridha MD: The Thyroid Solution