

## Thyroid Hormone Replacement Therapy

### *What is the thyroid?*

The thyroid is a butterfly-shaped gland that is located in the front of your neck. It is involved in controlling your metabolism and is your “thermostat” for your body.

### *How the Thyroid Functions*

The thyroid gland operates as part of a negative feedback mechanism involving the hypothalamus and the pituitary gland. First, the hypothalamus sends a signal to the pituitary gland through a hormone called thyrotropin releasing hormone (TRH). When the pituitary gland receives this signal, it releases thyroid stimulating hormone (TSH) to the thyroid gland. Upon receiving TSH, the thyroid responds by releasing two of its own hormones, T4 and T3, which then enter the bloodstream and affect the metabolism of the heart, liver, muscle and other organs. T4 is the main hormone released by the thyroid. T3 is made in the tissue after T4 to T3 conversion. Finally, the pituitary “monitors” the level of thyroid hormone in the blood and increases or decreases the amount of TSH released, which then changes the amount of thyroid hormone in the blood.

### *What causes hypothyroidism?*

Hypothyroidism is a very common condition that has multiple causes. Some of these causes include autoimmune disorders, e.g., Hashimoto’s thyroiditis, surgical removal due to cancer, radioactive destruction due to hyperactivity, e.g., Grave’s disease, reaction to environmental toxins, resistance to thyroid hormones at the receptor sites and finally, the body’s own response to frequent yo-yo dieting. The last one has

problems converting T4 to T3. *All of these require **lifelong** treatment.*

### *What are the symptoms of low thyroid?*

The symptoms of low thyroid, *i.e.*, hypothyroidism are many and can include: difficulty losing weight despite really trying, cold hands and feet, cold intolerance (can’t stand the cold and love the hot weather), dry skin, dry hair, brittle hair, diffuse hair loss, chronic constipation, yellow hands or heels with or without cracking of the skin, *high* cholesterol, and an irregular heart beat. This is not a complete list but the more common symptoms noted. You may have a few or all of these symptoms.

### *What are the long-term consequences of hypothyroidism?*

Accelerated heart disease, obesity, poor immune functioning, and mental cloudiness are but a few of the long term consequences of untreated hypothyroidism. The first one leads to an earlier death...need I say more?

### *How is hypothyroidism diagnosed?*

Hypothyroidism is diagnosed primarily by clinical signs and symptoms and not by serum values of TSH (unlike what is taught in medical school and residency). The mechanism that regulates TSH can malfunction depending on the etiology of the hypothyroidism and thus the TSH may actually be “normal” while the person has all of the clinical signs and symptoms. As what was originally taught in medical school for general exam, “when all else fails, look at the patient.” That does not mean that we do not check blood values. We check the

TSH and the levels of free T3 and free T4 to assess what amounts of hormones are actually available for your body to use. However, to “follow” lab values and not examine nor listen to the patient’s complaints is *bad* medicine. Therefore, you may have told many physicians over the years that you think you have a low thyroid, but the blood values kept coming back as “*normal*” and no one would treat you. That practice is *not* done in this office. Frankly, “if it looks like a duck, walks like a duck and quacks like a duck...it’s a duck and **not** a goose.”

### *What is the treatment for hypothyroidism?*

As the title notes, hormone replacement is the only efficacious method of treatment. As noted above on functioning, there are two thyroid hormones that are part of the system: T3 and T4. The two most common treatments are sole T4 replacement (Synthroid® or Levoxyl® therapy) or the older Armour® Thyroid therapy. The latter therapy has been taught in medical schools and residencies as ineffective and archaic. However, in clinical practice, I have found it to be the treatment of choice. Armour® Thyroid is derived from pigs and is a natural combination of both T3 and T4 in a specific ratio. Thus, it is not that it is “natural” that it is so efficacious. It is effective because it has *both* T3 and T4. In fact, if you have moral or religious prohibitions from taking porcine-derived medication, you can have compounded non-porcine Armour® thyroid. The presence of T3 appears to drive the conversion process of T4 → T3. The specific ratio of T3:T4 also appears to aid with the efficacy. Thus, taking Cytomel® (synthetic T3) along with Synthroid® may be better than Synthroid alone but the ratio of T3:T4 is not the same and it is not as effective as Armour®.

### *How much Armour® Thyroid do I need?*

**Enough but not too much.** That may sound flippant but in actuality it is not. If you take too much Armour® Thyroid, you will be put into a *hyperactive* state. The symptoms you would experience would be the exact opposite of what you have when you are in your *hypoactive* state, including excessive sweating, oily skin, damp, oily hair, radiating excessive amounts of heat, and heat intolerance. You may also experience some shortness of breath that is transitory. When you stop taking that amount and reduce it, the symptoms clear in approximately one to two days. We do check levels again approximately two months after you have been at what we believe to be adequate levels of hormone replacement but it is not vital to do so. **You can never take too much Armour thyroid by yourself**, since it would cause the hyperactive symptoms and they are not comfortable to experience and you would reduce the amount that you take on your own.

So if you believe that you (or someone you care about) have an underactive thyroid, please make an appointment to have it checked out and begin therapy, if we believe that it is appropriate. It is time that you start bringing yourself up to **optimal** levels of functioning, and the thyroid is essential to your life and that functioning.

Also please understand that while I firmly believe that this is the proper way to treat hypothyroidism, this is not what many practitioners here in the Fresno area do and they would consider what I am saying for most of this to be “heresy”. However, I challenge any of these physicians to show me a patient on Ar-

Armour<sup>®</sup> Thyroid who is properly balanced by clinical exam (not by lab testing), *i.e.*, one of my patients, who is being injured by taking the Armour<sup>®</sup> at the dose that I am prescribing it. Injury would of course be seen on clinical exam as having a rapid heart rate, excessive sweating, nervousness, etc. In addition, urine NTX can be tested to see if bone

turnover has increased to the point of developing osteoporosis. I can make this challenge because I have tested many of my balanced patients and they have all passed with flying colors.

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