Thyroid Hormone Treatment FAQ

WHAT IS THE THYROID GLAND?

The thyroid gland located in the neck produces thyroid hormones which help the body use energy, stay warm and keep the brain, heart, muscles, and other organs working normally.

THYROID HORMONE IS USED:

1) to replace the function of a thyroid gland that is underactive or has been surgically removed ("replacement therapy") and

2) to prevent further growth of thyroid tissue ("suppression therapy"). Suppression therapy is used primarily in patients with thyroid cancer to prevent recurrence or progression of their cancer.

Why do I need thyroid hormone pills?

Hypothyroidism is the most common reason for needing thyroid hormone replacement (see *Hypothyroidism brochure*). Levothyroxine(T4) taken once daily by mouth, successfully treats hypothyroidism in most patients.

How is the dose of thyroxine chosen?

The initial T4 dose is carefully selected based on your weight, age, and other medical conditions. The dose is then adjusted based on your thyroid hormone levels and your symptoms. There are several brands of T4 by prescription. Although these all contain the same T4, there are different inactive ingredients in each of the brands. In general, it is best for you to stay on the same brand or manufacturer.

How do I take thyroxine?

T4 is taken just once a day and results in very stable levels of thyroid hormone in the blood stream. The best time to take T4 is usually first thing in the morning on an empty stomach. However, the most important thing is to be consistent when you take it. If you miss a dose of T4, it is best to take the missed dose as soon as you remember. If you miss one dose, you can take a double dose the following day, if you miss two or more doses, please contact your physician for further guidance.

Does thyroxine interact with any other medications?

Medications that may cause a change in your T4 dose include birth control pills, estrogen, testosterone, some anti-seizure medications, heart medications, and some medications for depression. Iron, calcium, soy, acid blockers, and some cholesterol-lowering medications can decrease the absorption of thyroid hormone.

Should I take thyroxine while I am pregnant?

Since T4 is a hormone normally present in the body, it is absolutely safe to take it while pregnant. You often need an increased dose of T4 during pregnancy, so it is important to have thyroid hormone and TSH levels measured as soon as you know that you are pregnant.

What about "natural" thyroid hormones?

Desiccated (dried and powdered) thyroid extract obtained from pigs and cows, was a common and inexpensive form of thyroid therapy before the individual active thyroid hormones were discovered. It is currently available for purchase as a supplement, or by prescription as a medication (Armour®, NatureThroid®, NP Thyroid®). While desiccated thyroid contains both T4 and T3, the ratio of T4 and T3 in animals is not the same as in humans, so the hormone balance in animal thyroid pills is different from the human thyroid. The amounts of both T4 and T3 can vary in every batch of desiccated thyroid, making it harder to keep blood levels stable throughout the day. Desiccated thyroid extract should not be used in pregnancy. Finally, desiccated thyroid pills do have chemicals (binders) in them to hold the pill together, so they are not completely "natural". It is less frequently prescribed today, as there is no strong scientific evidence that desiccated thyroid has advantages over levothyroxine(T4).

What about T3?

The thyroid gland mainly makes T4, and a small amount of T3. T3 is the active form of thyroid hormone, produced by converting T4 to T3 in the cells of the body. This conversion of T4 to T3 happens outside the thyroid gland and occurs normally even in hypothyroid patients. T3 has a very short life span in the body, while the life span of T4 is much longer, ensuring a steady supply. There is no indication for the use of T3 alone for the treatment of hypothyroidism.

What about combination T4 and T3 treatment?

There has been interest in whether adding a low amount of T3 to T4 may benefit those patients that do not feel completely normal on T4 alone. One challenge of adding T3 is that it is available only as a short acting form, and needs to be given multiple times a day. Studies are underway to provide more information on the benefits and best dosing of combination therapy. A trial period of 3 – 6 months may be reasonable to decide if combination T4 and T3 therapy will help your symptoms.

Will thyroid hormone help me if I have hypothyroid symptoms but normal thyroid hormone levels?

If thyroid lab values are normal, symptoms are not likely to be due to a thyroid problem and patients should discuss other causes with their physician. In several scientific studies, taking thyroid hormone did not provide a benefit in improving symptoms, depression, or well-being in patients with normal thyroid hormone levels.

Why would I need to go on thyroid hormone suppression therapy?

Thyroxine can also be used to keep the TSH level in the low, or low normal range, this is called suppression therapy. This is an important part of the treatment of thyroid cancer and is effective in preventing the growth of microscopic thyroid cancer cells or residual thyroid cancer.

In the past, thyroid hormone suppression therapy was used to prevent benign thyroid nodules and enlarged thyroid glands from growing. More recent evidence has shown that this practice is not effective in regions of the world that have adequate iodine intake (such as the USA). Moreover, excess thyroid hormone can increase the risk of heart rhythm problems and bone loss, making this more risky than beneficial.

FURTHER READING

Further details on this and other thyroid-related topics are available in the patient information section on the American Thyroid Association® website at *www.thyroid.org*.