

The 15% Rule of Who Should Get T4/T3 Combination

The thyroid makes two hormones, T4 which has a long half life meaning it can be given once a day. T4 gets converted to T3 which is the active form of the hormone and has a short-half life, meaning it has to be given frequently. Most patient with hypothyroidism are treated with levothyroxine, which is T4. There are many brands of levothyroxine that include Synthroid, Unithroid, and Levoxyl. However, two very important recent articles suggested that about 15% of patients with hypothyroidism do not convert T4 to T3 properly and should be on a T4/T3 combination or on desiccated thyroid that contains T4 and T3. I wish to highlight both of these papers as they are very interesting and important studies.

One study came from the United Kingdom that looked at the prevalence of the gene that converts the T4 to T3. This is called the type 2 deiodinase. In this study, 15% of the population had an alteration in the gene that converts T4 to T3, the alteration is called a polymorphism. This polymorphism means the DNA is changed so that this enzyme works less effectively. The patients with this polymorphism required higher T4 dosing and had more psychological problems than those that did not have the deiodinase polymorphism. They did not examine whether these patient would benefit from T4/T3 combination and also did not actually measure the enzyme, they only looked at the gene coding for this enzyme.

Another very intriguing article came out in Italy that initially examined patients that had a thyroid nodule but were not on a thyroid medicine and did not have any other problems with their thyroid. Examining several thousand of these healthy patients, they were able to establish normal values for free T4, free T3, and TSH in this Italian population. Once these normal values were obtained, the researchers then took patients that had their thyroid completely removed for thyroid cancer, but did not get any other procedures done to the thyroid such as radioactive iodine. The patients with the thyroid cancer who had the thyroid removed were then placed on T4 or levothyroxine therapy and their free T4, free T3, and TSH were measured. All the patients had a normal TSH and that was the criteria for being in the study. However, approximately 15% of the people had a low serum free T3 that was below the range previously established. An additional 5% of the patients had a free T4 above the range that was established. This shows that about 15% of the people do not convert the T4 to T3 properly. This was based on serum T3 levels and is a very good indication that these 15% of the people would need T3 in addition to T4 to get both levels in a normal range. This study suggested that measuring serum free T3 is quite helpful in patients that are treated with T4 for hypothyroidism, an evaluation that is not normally done. This paper did not measure reverse T3, which some alternative doctors use to determine that the T4 to T3 conversion does not occur and actually this paper suggested that the measurement of serum free T3 itself can be used to determine which patients need T4/T3 combination treatment.

These 2 intriguing papers challenge the idea that all patients with hypothyroidism should be treated with T4. Dr. Friedman uses different thyroid medicines to treat patients with hypothyroidism including T4/T3 combinations, and desiccated thyroid that contains T4 and T3. Dr. Friedman interprets this data that the majority of hypothyroid patients do fine on T4 alone including himself, who takes only T4. Approximately 15% of the population does need T4/T3 combination to have an optimal effect on the thyroid. Dr. Friedman feels these patients are the vocal minority who are not doing well on T4 treatment and would benefit from seeing a thyroid specialist like Dr. Friedman.

For more information about Dr. Friedman's practice or to schedule an appointment, go to www.goodhormonehealth.com.