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When Bio-Identical T4 (levothyroxine) "Doesn't Work"

A person who lacks thyroid hormone is called "hypothyroid." Until 1957, the only successful treatment for these people was dried animal thyroid gland, which contains lots of stored thyroid hormones. In the 1950s, a time when natural products were mistrusted, synthetic biologically-identical hormone (T4, levothyroxine) was introduced and marketed as Synthroid®. Most doctors, wanting to be "modern," came to use T4 instead of the animal glands.

Yet treatment with T4 doesn't always work very well. Oh, it is far better than nothing but many people who take it still don't feel 100% well – how can that be? Some of the answers may surprise you.

Nobody will be surprised to learn that taking too little – or too much – thyroid hormone is not good. Most doctors assume such improper doses explain all failures of T4 treatment. However, experience shows that far more problems come from the facts that T4 has to be activated and some people can't do that efficiently.

Synthetic T4 is perfectly bio-identical …but it is not active thyroid hormone. Actually, T4 is a weak pre-hormone. This wasn't known when T4 was introduced. However, treatment with it worked fairly well because the cells of our body will convert T4 to the active form of thyroid hormone, which is called T3. "Fairly well" is not perfectly, though and not "automatically." The activation of T4 to T3 is a regulated step that is very important.

A healthy thyroid gland presents our body with a little active hormone (T3) and a lot of pre-hormone (T4). The T4 will be processed according to our situation at the moment.

- When "times" are "good," our cells convert T4 to T3 and increase our metabolism – the rate at which we produce and use energy. Normally, 80% of our body's T3 supply comes from T4 (the rest having come from the thyroid gland itself).
- However, when the body is stressed ("bad times"), it changes T4 to reverse-T3 (RT3). Reverse-T3 has an anti-thyroid effect to slow down our energy consumption for maximum efficiency. Thus, RT3 helps us survive illness, injury, cold and starvation. Reverse-T3 is also increased – and here too seems protective – when our gland makes too much thyroid hormone (hyperthyroidism).

We're now ready to understand some other reasons T4 treatment might not "work." First, just because the healthy body makes 80% of the T3 it needs from T4, we mustn't assume it can or will make 100%. If a totally normal human thyroid gland provides T3, why shouldn't our replacement treatment? Prescription levothyroxine is 100% T4, in contrast to "natural" animal thyroid, which supplies 80% T4 and 20% T3.

Secondly, T4 activation is reduced when people are stressed. Humans make RT3 instead of T3 in response to many forms of emotional and mental stress, as well as the physical kind. Even the lack of sleep is quite stressful. People with these issues are unlikely to efficiently process prescription T4 – and sometimes even the 20% T3 offered by natural thyroid treatment is not enough to be "optimal" for them.

Thirdly, the standard dosing strategy for Rx T4 is in no way physiological. A healthy thyroid gland releases hormones throughout the day – but doctors say it is fine to take T4 once-daily (based on ill-interpreted results of archaic tests). How would you feel if you had to eat all your day's food in one fast meal? Right! You'd be first too full, then too hungry. Worse, high T4 ("too full") after the dose prompts our cells to make RT3, not T3!

Did your physician say you need thyroid hormone but T4 treatment just doesn't seem to help? Don't stop taking it! Make this simple but important step: Break your T4 tablet and take half every twelve hours, starting as soon as you wake up. After two weeks, if you're still not "right," it is time to have some detailed blood tests done. Yes, lab tests now available are quite capable of revealing these problems – that's how we know all this!

Nearly all of our patients feel best when taking a mixture of T4 and T3. Some need even a higher content of active T3 than the 20% provided in "natural" thyroid. In the next paper, we'll discuss how to find your best treatment.