The truth about thyroid function that doctors always seem to get wrong

written by Dr. Ronald Hoffman | February 6, 2015

Dear Dr. Hoffman:

For years I felt great on natural Armour Thyroid. Then my insurance plan changed and I had to go see a new endocrinologist. She told me that Armour Thyroid was old-fashioned and dangerous, and switched me to Synthroid.

Since then I've never been the same. I have constant brain fog, I've gained 20 pounds with no change in diet, and I hate going out in the cold (didn't used to!). My skin is dry and my hair is falling out in clumps. I'm always constipated, my periods are very heavy, and my PMS is through the roof!

My endo has tried different doses of Synthroid on me, to no avail. She says she doesn't want to give me too much because the tests indicate I'm in perfect range. She suggests that maybe I'm stressed and should go and talk to someone (i.e., a shrink). –EP

"There are no controlled trials supporting the preferred use of dessicated thyroid [Armour] over L-thyroxine [Synthroid] in the treatment of hypothyroidism or any other thyroid disease." – American Thyroid Association Clinical Practice Guidelines for Treating Hypothyroidism (2012)

There are several reasons why these inflexible guidelines fail patients treated by orthodox physicians. On the other hand, a lack of understanding of the complexity of thyroid physiology causes some alternative doctors who uncritically embrace natural thyroid to completely miss the boat.

First, please bear with me while I offer a little lesson on how the thyroid works.

The thyroid makes two hormones: a lot of T4 and a little bit of T3. The latter is the only thyroid hormone that actually does anything in the body. It's essential for gene transcription in the nucleus of every cell in the body.

Why is that important? Gene transcription is the key to virtually every piece of metabolic, growth and repair work that gets done in all your organs. When gene transcription is impaired, as happens if there's inadequate T3, everything slows down.

L-thyroxine is T4 alone. No T3! So why do endocrinologists think that could ever work? Because the body converts T4 to T3 slowly, they think it's a safe and reliable way to deliver T3 to the cells.

Mainstream doctors don't like mixed T4/T3 preparations (Armour, Euthroid, Natural Dessicated Thyroid, etc.) because T3 has a short half-life in the body and soars to high levels for a short time, then crashes. They like the

time-release effect of synthetic T4 preparations. They worry that too much T3 at once could trigger dangerous heart arrhythmias (and that is a real concern), especially in the elderly.

And besides, they say, T4 is easy to keep track of because it can be conveniently monitored with the TSH test.

So what's wrong with that line of thinking?

1) The thyroid makes a little T3 for a reason. Just because T4 is the main product of the thyroid doesn't mean that if you're making an ideal thyroid substitute, you leave the T3 out. T3 is the business-end of your thyroid, and it's always good to have a little natural T3 on board.

2) T4 preparations tend to raise the T4, but usually leave the T3 borderline or low. A majority of individuals don't notice this, and Synthroid seems to work fine for them (or would they feel better on T4/T3 combinations? They'll never know if not given an opportunity to try!). In my experience, at least 40% of patients that I see on T4 preparations have normal T4, normal TSH, but suboptimal T3.

3) You need deiodinase to convert T4 to T3. Not all tissues of the body have deiodinase. And some tissues have more or less deiodinase activity. Therefore, T4 meds may not do a complete job of powering all cells. So, for example: heart just right; fat cells not enough; brain underpowered; hair abysmal!

4) Too much T4 shuts down deiodinase via a feedback mechanism. So just giving more and more T4 is not the answer for many individuals. Their TSH gets real low suggesting they're getting too much thyroid, but little additional useful T3 is getting made.

5) Many individuals have defective deiodinase. That means less T4 is converted to body-ready T3 in the nuclei of the cells. Researchers have now even isolated the genetic variant that is responsible for faulty T4-T3 conversion. The single nucleotide polymorphism (SNP) is called Thr92Ala. This SNP is highly correlated with weight gain and insulin resistance, and it's present in about 15% of the population!

6) Who says blood tests are the best way to assess the adequacy of your T3? T3 acts deep within the nucleus of the cell, and it's impossible to measure levels there with a blood test. Even if your blood tests are in normal range, what's to say that there is adequate T3 in the nucleus to power optimal gene transcription? Another way of saying this is that a given level of T3 on a blood test may be fine for one organ, but not sufficient for another.

7) Sick patients don't convert well. Patients with a wide gamut of non-thyroid illnesses have high levels of reverse T3. Reverse T3 is an inactive form of T3 that is incapable of promoting gene transcription, as T3 does. Elevated reverse T3 can sometimes be used to indicate that not enough T3 is being utilized by the cells. Sometimes, certain drugs can interfere with thyroid function. Stress, too, via excess cortisol, can unhinge T4 to T3

conversion.

So, there are a lot of reasons to favor the use of T4/T3 combinations, or piggy-backing pure synthetic T3 (Cytomel) onto standard T4 thyroid replacement drugs. This can be literally life-changing for many hypothyroid patients.

Why then are so many patients who take natural thyroid still having problems? Or seem to be intolerant to T3?

For one, it may be that hypothyroidism is not the end-all panacea for their ills. A multitude of other problems may exist and require correction.

But a common reason a single dose of a T4/T3 combo doesn't work for everyone is the short half-life of T3 in the body. It lasts maybe six hours and then rapidly declines. For some patients, twice-daily, or even three-times-daily dosing of smaller amounts of Armour Thyroid is required for balanced energy. I even have one patient who swears says she only feels well on ¼ grain of Armour Thyroid *four times a day*, which she takes faithfully!

I look forward to the day when powerful, monolithic organizations like the American Thyroid Association and the American Association of ClinicalEndocrinologists reconsider their dogmatic stance about natural thyroid prescribing in light of new scientific evidence. But until that time, please avail yourself of resources and knowledge about alternatives to Synthroid and its ilk, and consider seeing an integrative physician skilled in highly-individualized thyroid prescribing.