

# Thyroid Blood Chemistry

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In the upper left hand corner you will notice a tab called "Archives." Click on it and you can access close to 300 programs on various topics, a virtual post graduate course on clinical nutrition.

Concerning the topic for this Tuesday Minute, you can view the links below on hypothyroid, but I'd like to add some additional clinical pearls for when your results are blocked, even if you have the right protocol.

My thanks to Dr. Abbas Qutab and Harry Eidenier for sharing these pearls with me over the years. Adrenal and thyroid functions go hand in hand. Where you find one you will usually find the other. Why? Because adrenal cortical hyper function results in excess cortisol.

T4, as you know, is secreted by the thyroid and must be converted to a form cells can use, T3. T3 is necessary for the conversion of carotenoids to vitamin A as well as the production of progesterone.



Low levels of T3 result in lower ATP production as T3 is needed for healthy mitochondria. Low levels of T3 result in low calcium uptake which means reduced bone calcification. Also, low levels of T3 can mean reduced human growth hormone and reduced blood flow to the kidneys. But perhaps most importantly, low levels of T3 can result in reduced dendritic growth and an increase in senile dementia and Alzheimer's.

Cortisol is necessary to reduce inflammation but excess cortisol blocks the conversion of T4 to T3. This fact alone makes it important to incorpo-

rate lifestyle and dietary modifications to manage excess cortisol.

T4 contains four molecules of iodine. The liver and kidneys are major players to convert T4 to T3 by removing one molecule of iodine. During the conversion process 30-45% of total T3 is converted to active T3. 10-18% of the total T3 is converted to reverse T3.

Reverse T3 is an inactive isomer that interferes with normal thyroid function when elevated. It's normal to have some reverse T3. However, it becomes increased with infection, diabetes, malnutrition

and other major diseases. But the major reason reverse T3 is elevated is due to too much cortisol or excess thyroid hormones.

What's left from the active T3 (the 30-45%) and reverse T3 (the 10-18%) is converted to a sulfated form of T-3 and thyroacetic acid. When we do the math these forms make up 37-60% of total T3. But here's the part I didn't know. Both the sulfated form of T-3 and thyroacetic acid remain inactive until acted upon by gut flora and returned to active T-3.

Let me say that again. 37-60% of the coveted T3 must be activated by the gut flora.

Researchers also tell us stress affects the pH of the gut which affects the health of bacterial flora. 20 years ago Biotics created a product called Thyrostim to provide the factors necessary to stimulate the pituitary to activate the thyroid. I always wondered why a thyroid product contained probiotics. Now it makes sense.

Keep in mind excess cortisol will cause a thinning of the lining of the bowel contributing to, if not causing, leaky gut. Leaky gut causes excess immune activation and probably a major role in the autoimmune condition Hashimoto's thyroiditis. So excess cortisol slows the conversion from T4 to T3, it can increase reverse T3 and affect gut flora and permeability.

Some of the products from Biotics Research that balance adrenals include: ADHS, which stands for adrenal hyper secretor and is a formulation of adaptogenic botanicals; De-Stress, a decapeptide shown to reduce cortisol; Bio-CMP and Potassium-HP, alkaline minerals to slow down the sympathetic nervous system; PheniTropic, a source of GABA that crosses the blood brain barrier, hence relaxation; and Phosphatidylserine, an oil which also has been shown to reduce cortisol.

Another factor that is overlooked and also affects the T4-T3 conversion is the use of estrogenic compounds like birth control pills, hormone replacement therapy, excess consumption of commercialized beef and a sluggish liver. And let's not forget the effects of xenoestrogens from pesticides and plasticizers which block receptor sites similar to estrogen. That's why Dr. Qutab always starts his patients on a detox and then uses Meda-Stim to support the T4 - T3 conversion. Anyone who is on estrogen or for that matter anyone who is on synthetic T4 like Synthroid gets Meda-Stim, 2 three times a day.

Meda-Stim contains all the conversion factors needed as well as some adaptogenic botanical agents to support thyroid health. It is one of the most valuable products in the Biotics line. Most of us can't or wouldn't want to change the medications that our patients are on; however, by adding Medi-Stim we can maximize their effectiveness.

Another less seen phenomena is that we get the blood thyroid levels normalized and the patient still has symptoms. Years ago Dr. George Goodheart called that phenomena cellular resistance. He found the use of RNA/DNA as found in Nuclezyme-Forte and rubidium as found in Rb-Zyme can overcome most cases of cellular resistance.

Make sure you see the "Thyroid Summary Sheet" below to get all the symptoms and recommendations to balance thyroid function. The big keys are to make sure the conversion from T4 -T3 is smooth by reducing cortisol, healing the gut flora and making sure the estrogens of the world are not inhibiting this important conversion.

Thanks for reading this week's edition of the Tuesday Minute. I'll see you next Tuesday.