



THE TOP 7 THINGS

ATHLETES

NEED TO KNOW ABOUT OPTIMIZING

PERFORMANCE

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# 1. NEUROTRANSMITTERS:

Neurotransmitters are the signal proteins that your brain and body use to regulate things like mood, sleep, memory, motivation, appetite, addictions, and most other behaviors. Even if you knew nothing else about neurotransmitters, you already understand how crucial they are for your performance as an athlete. We are all different. But wouldn't it be amazing if you were not only able to discover which neurotransmitters dominate in your own individual brain and body and learn more about how they work, but also be able to positively influence them with targeted nutraceutical supplements (most of which are considered acceptable by WADA and USADA)?

Well, now you can. To get started simply download the questionnaire created by Eric Braverman, MD and use it to identify your dominant nature as well as likely deficiencies.

<http://advancedpsychcare.tripod.com/sitebuildercontent/sitebuilderfiles/braverman.test.pdf>

By understanding more about your personal neurotransmitter profile, it becomes possible to help you create an optimal "nootropic" support program specific to your needs. **Nootropes** are naturally derived and pharmacologic substances which help to enhance cognitive processing speed, focus, concentration, motivation, and retention of newly learned information.

## 2. MICRONUTRIENTS:

Micronutrients, balanced in optimal levels, are involved in nearly all of the molecular chemistry which occur in every cell of our bodies. Micronutrients profoundly affect our neurotransmitters, hormone signals, energy production mechanisms, and the vast majority of cellular processes which occur continuously in each of our organs. Simply put, any imbalance of these essential nutrients, vitamins, minerals, antioxidants, fatty acids, and amino acids leads to disease and dysfunction—never mind suboptimal performance.

As essential as all of these micronutrients are, as a high-performance athlete it is essential that you carefully monitor your levels.

Most doctors and sports specialists don't test them at all. The good ones do, but they usually use labs which only analyze serum levels. (The "serum" is the liquid part of your blood in which your blood cells float.) But the really important biochemical action occurs *inside* your cells, and sometimes the serum levels do not accurately reflect the levels inside your cells. So the most advanced doctors and specialists working with athletes ensure that the tests that are run are *intracellular*. In this way it is possible to truly understand what is going on inside your body, and which specific nutrients require special attention.

Once this data is available, it is possible to quickly replenish your cellular stores with oral supplements (or in some cases injectable nutrients).

## 3. HORMONES:

Balancing hormones does not equal "juicing".

An in-depth understanding of how to increase the body's own production of specific hormones can enable athletes to stimulate optimal hormone synthesis without resorting to blood doping. This must begin with a precise understanding of the endocrinology unique to each athlete.

A common problem that goes underdiagnosed (or misdiagnosed) is a male hormone imbalance which appears to be low testosterone production, but is in fact adequate testosterone production in the face of abnormally high conversion to estrogen. Such men have "low T" when they are tested, but incomplete hormone panels fail to reveal the "high E". The optimal treatment for such conditions is not to add more testosterone but rather to decrease the "aromatization" to estrogen. Often this can be achieved with nutraceutical (non-pharmacological) methods.

Dozens of similar hormone imbalances involving the sex hormones, pituitary hormones, adrenal hormones, thyroid hormones, etc. are extremely common and often get missed. If you are an athlete who takes performance seriously, that is unacceptable.

Make sure you obtain a comprehensive hormone analysis and interpretation—and make sure your physician is well informed on the latest WADA and USADA regulations.

## 4. TOXICITIES

We all know that tuna may contain significant amounts of mercury. But tuna is only one of many sources of one of various toxic metals. Heavy metals—which are usually ingested without us being aware of it—accumulate in our bodies, particularly in our fatty tissue (think: brain), and can contribute to significant health issues including fatigue, foggy thinking, cognitive decline, memory problems, mood changes, and declining physical performance. Heavy metals impact the mitochondrial function and directly interfere with the the production of ATP which is the "energy currency" of our body.

Undiagnosed heavy metal toxicity can be devastating to athlete interested in optimizing health and vitality, yet testing is often neglected. A simple blood test can detect concerning levels of the most common toxic metals including mercury, cadmium, lead, arsenic, and aluminum. If levels are elevated, this screening test can be followed up with more sophisticated "provocation testing" using 24 hour urine collection after intake of a chelation agent. Formal detoxication protocols exist for each toxin, but the first step is accurate diagnosis.

## 5. FOOD SENSITIVITIES

Most of us know someone who is gluten sensitive. The worst form of gluten intolerance is called celiac disease and individuals with this condition must avoid gluten-containing foods at all costs. But less severe forms of gluten sensitivity are far more common. Gluten is a common wheat protein and is present in most conventional baked goods as well as most pastas, soups, fillers, etc. For years we have been taught that whole grain bread and whole wheat pasta is "healthy", but unfortunately that is not the case for those with gluten sensitivity. But it is important to realize that gluten does not have a "monopoly" on healthy-sounding foods that can be bad for your body. It turns out that food sensitivities are very idiosyncratic and we react to foods differently.

Modern scientific testing is now available which analyzes which specific foods trigger our unique individual immune systems and incite an inflammatory response. In some cases the reactions can be subtle, while in other cases they can cause significant symptoms. The most common reactions are poor digestion, gut inflammation, malabsorption, generalized malaise, fatigue, joint pain, headaches, and problems with focus and concentration. Food sensitivities are now easy to detect using a number of labs which specialize in this area of testing. They are the first step in unlocking the potential of truly personalized nutrition.

For high performance athletes, it is imperative to understand not just optimal nutrition in general, but the **best diet for you as a unique individual**. Other distinct areas of diet to explore include food allergies, enzyme deficiencies, and toxicities, all of which can cause increased intestinal permeability and lead to "leaky gut" syndrome.

## 6. HEART HEALTH

Some of the world's fittest athletes, including recent Ironman World Triathlon champions have been diagnosed with life-threatening heart conditions prior to age 40—notably while they were still competing at an elite level. It is unwise to suppose, as many do, that high-intensity training is the equivalent of "performing a cardiac stress test every day". Heart problems can be electrical, vascular, or structural. And they are more common than you may think.

An ECG can detect most electrical problems in the heart, although sometimes a continuous 72hr ECG (or longer) is necessary to detect conduction abnormalities which only occur occasionally. This is called a Holter monitor. If you have ever experienced "palpitations", a baseline ECG is in order.

An EchoCardiogram is an ultrasound of the heart. This is the best test for looking at the anatomy of the heart and ensure that the valves, chamber walls, and the outflow tract are all normal. It also enables accurate measurement of the "ejection fraction" which is the percentage of ventricular blood volume which is pushed out with each heart beat and thus indicates the **strength** of your heart muscle.

A Heart Scan provides a precise measurement of the amount of calcified plaque that you have in your coronary arteries. Alternatively, a CIMT Carotid Scan visualizes both soft and hard plaque in your major arteries. These tests are essential for anyone over 40, and those with elevated plaque levels need specific therapies to stabilize, or ideally, actually **reverse** these plaque deposits.

A thorough cardiac evaluation is not just important for performance, it is important for your life.



## 7. BLOOD TYPE, DOSHA, & ACID TEST

While there are many factors that provide insight for a truly personalized nutrition and supplementation plan for optimal performance (all of the 6 previous aspects provide crucial insight) there are other actionable factors which should be considered as well.

Although controversial and certainly not the most important element in nutritional selection, Peter D'Adamo's Blood Type Diet can help some athletes with larger concepts such as "how much meat should I eat?". According to the blood type diet, people with Type O blood tend to require higher levels of protein intake and experience better performance when eating meat. Those with Type A, tend to do better as vegetarians. While I do not advocate that elite athletes make consequential nutritional decisions based solely upon their blood type, I do recommend that this factor be included.

According to the Ayurvedic health and wellness system originating in ancient India which divides people into three constitutional categories or body types—Kapha, Vatta, and Pitta—understanding the associations related to health and performance attributable to your type can provide helpful information that can round out the clinical lab data obtained from your sports physician.

There is also a burgeoning amount of evidence revealing the importance of maintaining more alkaline levels in the blood. A simple blood test can give you a general idea of your acid levels. Diet, exercise, hydration status, kidney and lung function, and many other factors affect acid production. Keeping track of such details is important when maximal performance is the goal.