



## *Acupuncture & Natural Health Solutions*

### **Functional Medicine Summer Series #7** **Comprehensive Metabolic Panel** **The Electrolytes**

Greetings to my Needle-Not-Fearing Friends,

Welcome back to the summer functional medicine series about the basic blood lab values. Today, we will dive deeper into the CMP14 aka the Comprehensive Metabolic Panel aka the Chemistry Panel, specifically, the electrolytes and carbon dioxide.

Sodium, Potassium, and Chloride are electrolytes. The functional range for sodium is 135–140 mmol/L, the functional range for potassium is 4.0–4.5 mmol/L, and the functional range for chloride is 98–110mEq/L.

Sodium and potassium exchange over the muscle barrier when you contract or use your muscles. Only one of the values of sodium or potassium needs to be out of the optimal range, either high or low, to indicate you have some sort of stress response occurring in your body. It is when we have a chronic stress response happening that leads to adrenal fatigue or adrenal exhaustion.

The stress response can be triggered by long-term sickness, food sensitivities, or some sort of toxin in the body, such as heavy metals, parasites, candida, the Epstein Barr virus, etc. When left unchecked, over the long-term, these things become adrenal instigators.

If sodium and/or potassium are high or low, we know the electrolytes are being burned through too quickly, there is chronic stress happening in the body and you need some adrenal support.

Now, of course, sodium can go up from eating a high-sodium diet. Sodium and potassium can go up if you drink a lot of energy drinks. Drinking coffee or high-caffeine drinks also leads to a depletion of the electrolytes and minerals, leading to issues with water retention and swelling, stress on the kidneys and burning through the electrolytes. Imbalances of sodium and potassium can also be the reason the adrenals are stressed out. We have to ask questions: What are you eating and drinking? Are you under emotional, physical or toxic stress?

If your electrolytes are consistently out of the functional range, it is a good idea to test the adrenal system. Now, every alternative health practitioner can support the adrenals, but the testing and treatment I use actually fixes the issue and does not just limp you along using natural products. If you want to discuss further adrenal testing, please schedule an appointment and I will get you all set up.

The testing is important because everyone is different, and everyone has a different cortisol rhythm throughout the day. We use your individual test to customize the treatment to exactly what you need. There is no guesswork. The lab tells us exactly what to do.

If sodium is low, supplement with Celtic sea salt ½-1 tsp in 32 oz and drink throughout the day, or you can supplement with Power Fuel by Nutritional Frontiers. If potassium is low, supplement it with a basic potassium supplement. You can find one here, **Potassium Citrate**.

Chloride is another electrolyte mineral that helps balance water and all body fluids. The functional range for chloride is 98-110mEq/L. If chloride is high, this indicates a stress response and overactive adrenal glands. Further adrenal testing is indicated. If your chloride level is low, this tells me the adrenal glands are under-active and further adrenal testing should be done.

The final value we will discuss today is the carbon dioxide level. The functional range for carbon dioxide is 23-28 mmol/L. Carbon dioxide is not an electrolyte, it is a waste product of all the bodily tissues. This lab value measures how much carbon dioxide is dissolved in the blood. A high carbon dioxide level indicates overactive adrenals and indicates further adrenal testing. A low carbon dioxide level points to some sort of poisoning or injury, either from medication, alcohol use or a vaccine. We will need to look at other lab values to tease out the reason for a low carbon dioxide level.

If all the electrolytes are high, you could be dehydrated. So many of us just do not drink enough water throughout the day. Water intake is the number one thing you should look at if all the electrolyte values are high. You should aim to drink half your weight in ounces every day. For example, if you weigh 200 pounds, you should drink 100 ounces of water every day. Most of us fall way short. If you drink caffeine, your water intake needs to be even more. If the electrolytes are perpetually high, despite drinking enough water, further adrenal testing is indicated.

If all of your electrolytes are low or if you are doing a lot of sweating, you could supplement with electrolytes. Be careful with products like Gatorade because they contain sugar and food coloring. I like Power Fuel by Nutritional Frontiers. There is a berry flavor **Power Fuel Berry** and the orange flavor, **Power Fuel Orange**.

I like this formula because it also contains d-ribose that helps with ATP production (think energy), it has a good electrolyte profile, and it contains DMG which helps with methylation and supports the adrenal glands.

Today, we discussed four CMP14 values that give us insight into our adrenal health and our electrolyte status. I hope you found this to be valuable and worth your time.

The HPAT - Hypothalamus, Pituitary, Adrenal and Thyroid axis, when out of balance, leads to all chronic illnesses. If you are taking medication long-term, checking your adrenal system for an imbalance can potentially reverse those chronic illnesses.

Be sure to check back next time when we continue our analysis of the CMP14 and dive into a discussion about glucose and A1C levels. Until then, have a fabulous week.

Want more natural health insights? Listen to my podcast where I discuss lesser-known approaches to chronic health issues. [Listen Now](#)

Supporting your health journey,

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