Some legal stuff

I understand that Mark Hathaway provides educational assistance, tutoring, consulting and coaching services to help me understand concepts in nutrition, diet, food and other areas deemed important in order to live a fuller and healthier life, and in association with this education to learn specifically of the foods, dietary supplements or more that can assist in balancing my state of health.

I further request and accept the use of any tools of the "health trade," and at my sole discretion under retained right, in whatever form available in a free market that may be provided for my use to further my health education be it software, workshops, testing or health auditing apparatus, clinical or laboratory equipment.

I understand that Mark received certification in Flow Systems technology for health auditing through professional training programs from Biomedx (Chicago), but is neither offering nor providing a service under this agreement under any official government certification and/or license as a health, or diet professional.

I understand that the health coaching services under this agreement does not, cannot, and will not provide any diagnosis, prescription, or treatment options for any medically or otherwise defined health ailment wherein only a licensed professional may be competent to address such issue, and further, should miscommunication result in a perception that such is the case, I acknowledge that I alone bear full responsibility for any actions taken due to the miscommunication. At no time is this coaching service intended as a substitute for regular medical or other licensed care.

I understand that I assume all risks from the use, non-use or misuse of information, materials or opinions provided by Mark Hathaway during my health coaching sessions, trainings or presentations.

Today's Topics

1. **Overview Electrolyte Balance (Electrolyte Excess / Deficiency)** - Electrolyte Balance comes in at the top of the hierarchy of all the points of stasis that we are looking to bring into balance. Electrolytes = electricity and one's body can have too much or too little and either situation is a precursor for the manifestation of issues with the tissues that unfold in many directions. Certain issues with digestion may take priority from a point of view of processes that need to be corrected before anything else can get better, but as far as those ideal ranges of things to watch, our electrolyte balance is the most critical. Today I will be presenting you with an overview of this most important metabolic control mechanism, how to measure this vital bio-marker and what things too look out for.

Electrolyte Balance

INTRODUCTION

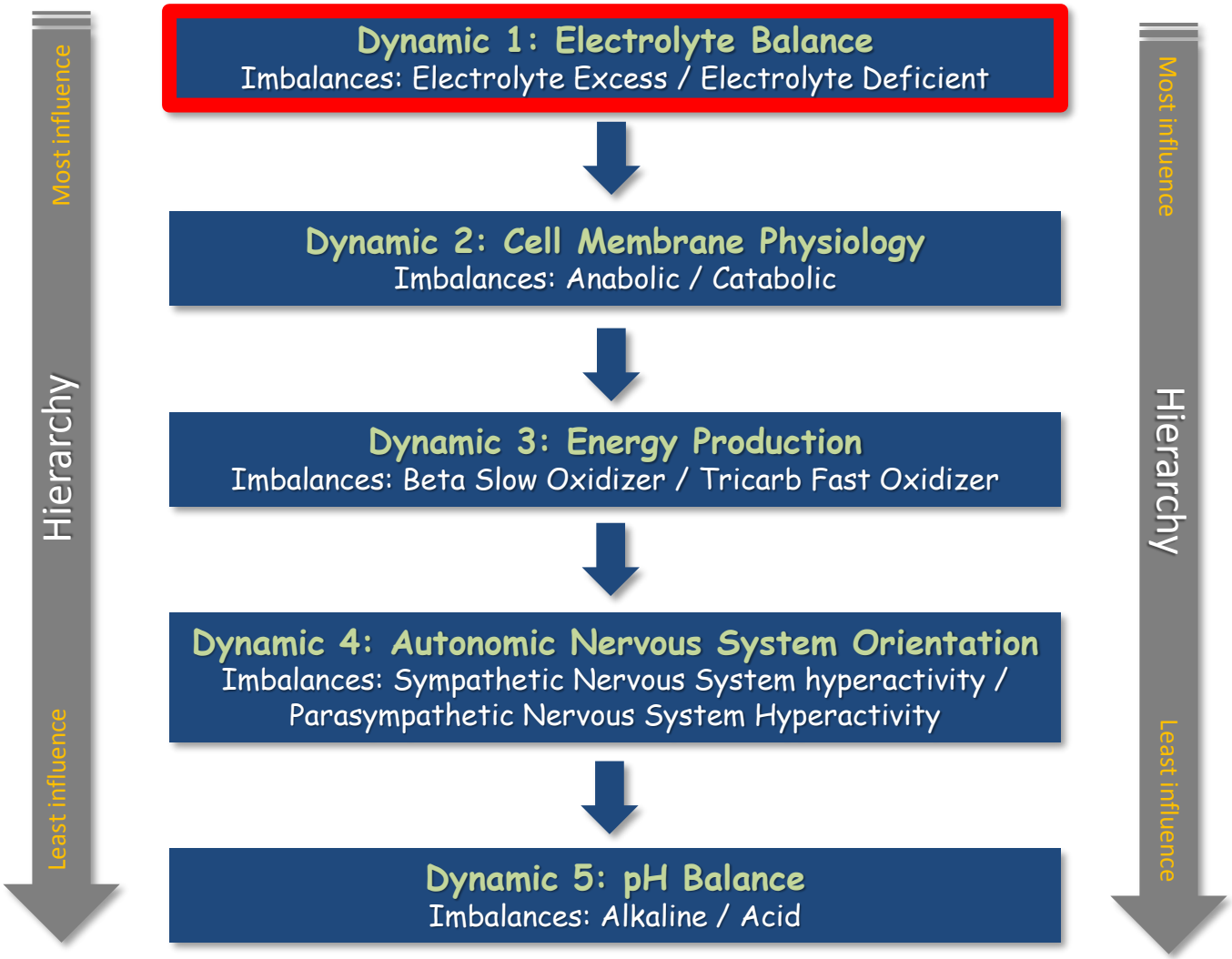
Body fluids are an aqueous (of or containing water) electronegative colloidal suspension. This is to say that in normal body fluids the particles in suspension remain discrete, or separate, because they are all negatively charged. In other words, they do not clump together. This discreteness of particles is essential to serve the function of that suspension which is, quite simply, to serve as the body's transport medium. As long as the colloid remains dispersed it effectively transports nutrients, waste products, enzymes, hormone, antibodies and so on.

Electrolyte Balance

Cells not clumping together!

How important do you think this is? That's right, its everything

The Five Fundamental Balances



Where does this work come from?

Synthesizing *the primary contributions* of the greatest minds in health *science of the* past century and *sequencing the best of their strategies* into a hierarchical structure that logically *points you to the most* important concerns, balance points, *and interference* patterns causing problems *in fluid dynamics.*

Dr. Emanual Revici

Cancer Therapy
Cell Membrane Physiology
Lipid/sterol mechanics
Anabolic/Catabolic
Diphasic nature of human life

Dr. Carey Reams

Fluid dynamics
Uncovered what he believed to be the mathematical equation for perfect health in the human body.
Reams Biological Theory of Ionization

CS + [1.5 6.4/6.4 6-7 C .04 M 3/3] = PH

CS (Common Sense) plus the equation for [the ideal line of least resistance in body chemistry] equals PH (perfect Health).

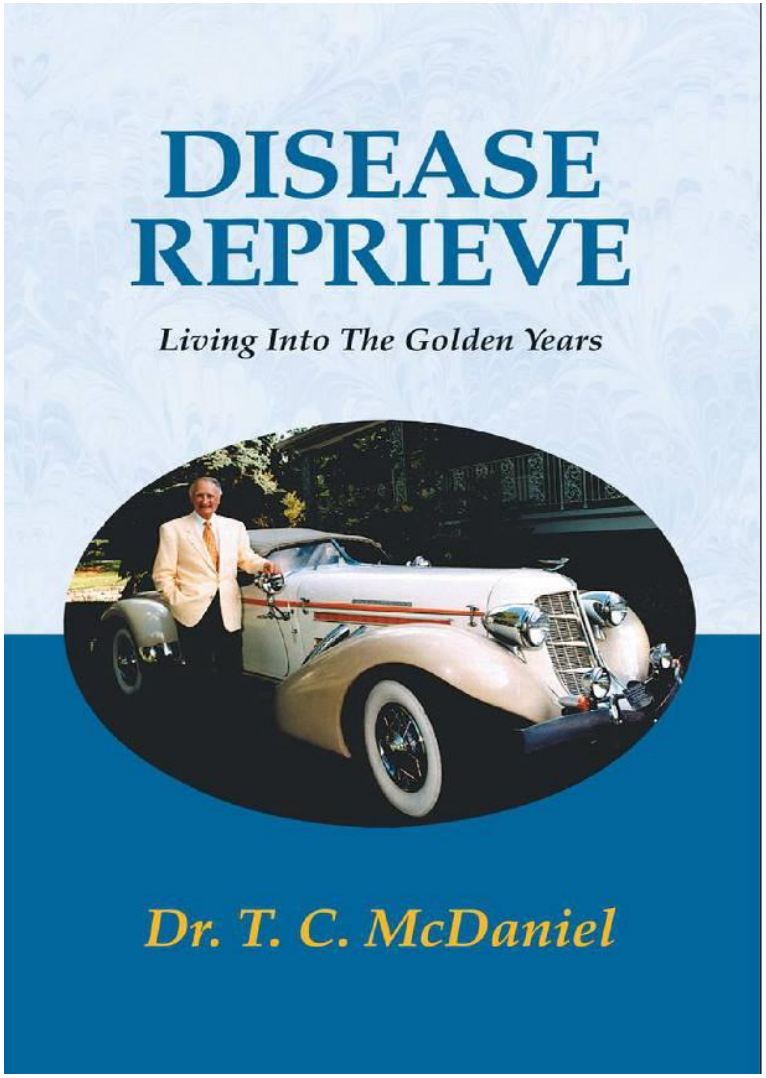
Dr. T.C. McDaniel

Cardiovascular expert
Zeta Potential - the measured ratio of an-ions to non-ions and cations in the body's circulatory terrain.
Wrote the book, Disease Reprieve - Living Into the Golden Years

Dr. George Watson, PhD.

Nutritional Psychiatry for Emotional Health & Cognitive Performance.
Cellular metabolism and energy production.
Coined the terms "fast / slow oxidiser"
Fuel for Proper Brain Function and Balanced Emotions

Dr. T.C. McDaniel



Why is Electrolyte Balance so important?

Electrolyte Balance

Either too many or too few electrolytes, or electrolytes with the wrong electromagnetic charges, can result in a collapse of the colloidal suspension with severe disease consequences.

Colloidal Suspension?

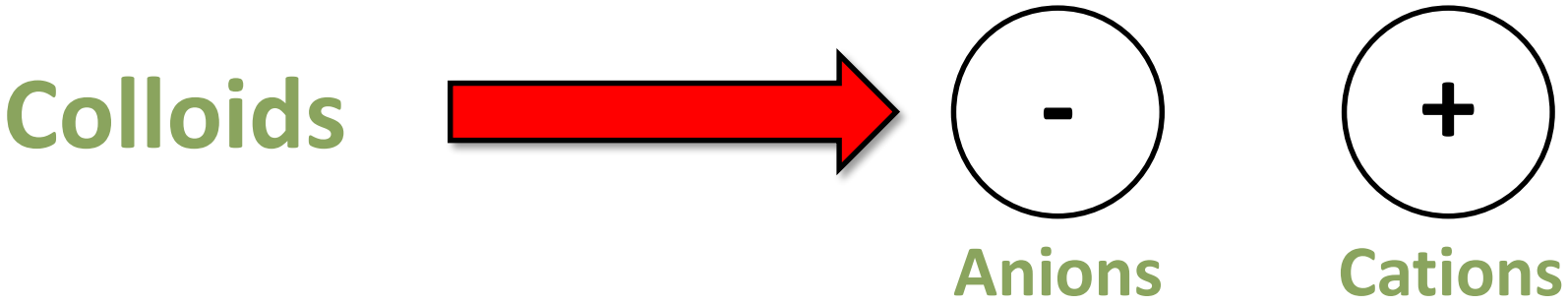
Zeta Potential

IN ESSENCE, BLOOD IS A SUSPENSION OF COLLOIDS

In colloid chemistry blood could easily be thought of as nothing more than a colloidal slurry and the principles that apply to any colloidal slurry or suspension also apply to the blood. The term most apt to explain the coming together of the red blood cells and the various microbial forms in the blood is **ZETA POTENTIAL**. This relates to the electrical charge around a colloid. In the blood this is controlled by pH and all the other elements found in the "soup".

Zeta Potential?

Zeta Potential



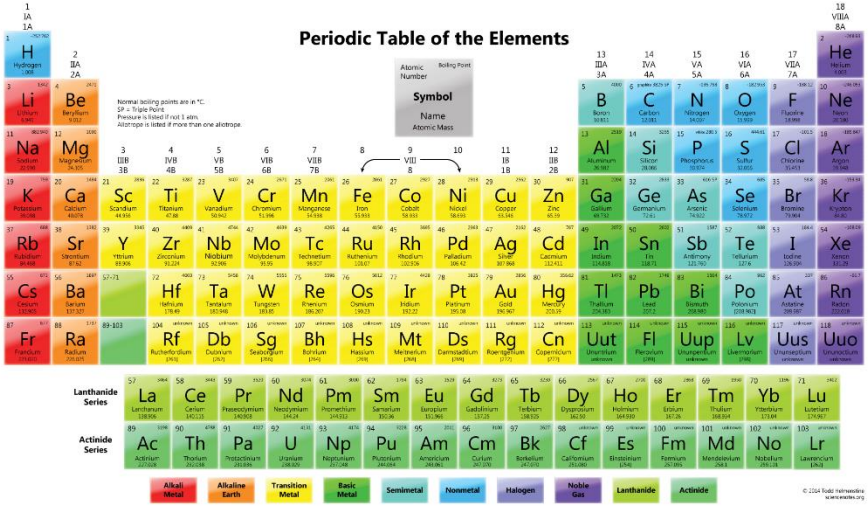
All of life moves about with a constant interplay between the forces of ions. Ions are electrically charged atoms or groups of atoms. Anions are the negatively charged ions and are created through an electron gain and cations are the positively charged ions created through an electron loss. In colloidal chemistry the term used to discuss the charge around a colloidal particle is **zeta potential**.

SO….

Zeta Potential

Is the body electric?

Well yes, the body is a bag of elements. This is a periodic table of the elements



You are a bag of fat, protein, sugar, ANIONS and CATIONS. That's it! This is the stuff that makes up the terrain of all the cells of your body and it is the 'stuff' around which every cell exists and either experiences life, or various stages of life to ultimately death.

It's all about

ZETA

POTENTIAL!

If Zeta potential is **LOW**

Toxins cannot be suspended for elimination and nutrients cannot be suspended for absorption or transport to the cell

Pretty Important

don’t you think?

You Bet!

Zeta Potential - Definition of Terms

Zeta Potential- *Zeta potential indicates the degree of repulsion between adjacent, similarly charged particles in a dispersion.*

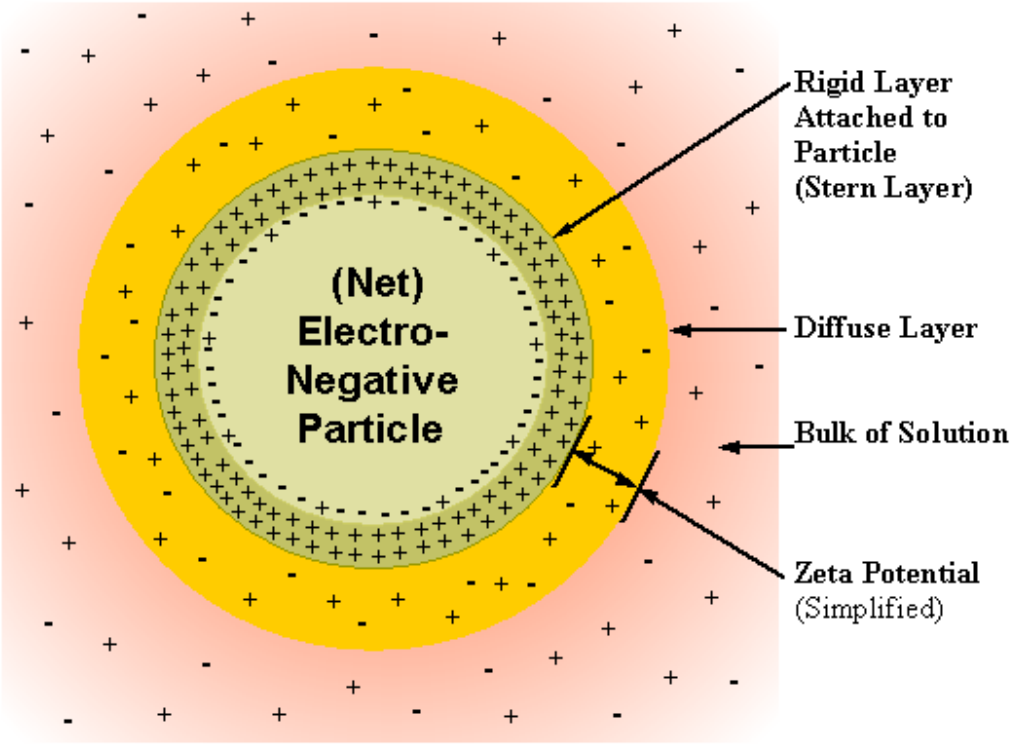
Anionic (-) negative charged - *Anionic substances in the blood repel each other and keep the blood dispersed.*

Cationic (+) positive charged - *Cationic substances in the blood causes the blood to aggregate or clump together.*

Zeta Potential

In a general way of thinking which is overly simplistic, think of anions as dispersers, and cations as coagulators. Anions disperse things, cations bring things together. Further, you could say anionic leans alkaline, cationic leans acid.

Zeta Potential



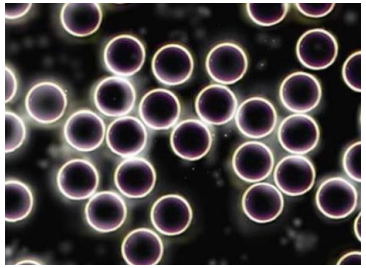
When tiny minerals or organic particles (colloids) are suspended in a fluid, the negative ionic charge around the colloid is what maintains the dispersion or discreteness of the particles of the suspension.

Zeta Potential

Our Pee Colour in relation to blood Zeta Potential & coagulation

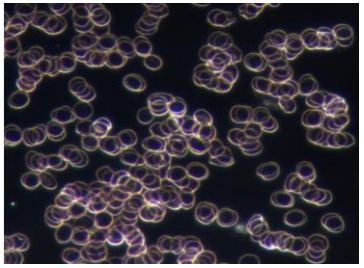
Hydrated

Good Zeta Potential & dispersion (around 12mS)



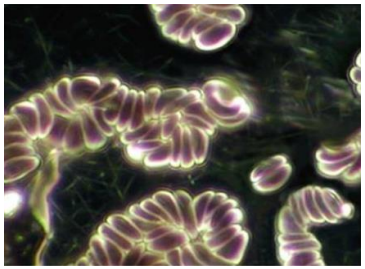
Dehydrated

Zeta Potential is being lost and blood starting to coagulate)



Extremely Dehydrated

Zeta Potential is extremely poor resulting in high levels of cardiovascular stress



Measuring Zeta Potential

Ideal Ranges
(conductivity meter)

Urine – 5 mS to 15 mS. Ideal 12mS

(perfect zeta potential / 50% workload on kidneys)

Saliva – 4.5 mS to 5.5 mS

mS = millisiemens

Zeta Potential

Did you know?

Lemons are the only food on the planet that is Anionic. This is why lemons are so good for your liver. The high levels of Anions cancelling out the toxicity of the toxic Cations

Zeta Potential

Concept of Zeta Potential is known in industry

Soap

Paint

Water Treatment

Anions Disperse……. Cations bring together

Concept of Zeta Potential is known in industry

In various industries the concept of zeta potential is common knowledge. Zeta potential plays a critical role in many industrial processes. The manufacture of soap is one example. Water by itself does not always clean as well as it could. Sometimes the water needs to be made wetter. How can you have wetter water that becomes a better cleaner and disperser of dirt on grungy dishes? By adding anionic surfactants to the water thereby changing its charge. The anionic soapy water does a better job of getting between the cationic dirt particles of the dirty dishes and disperses the garbage

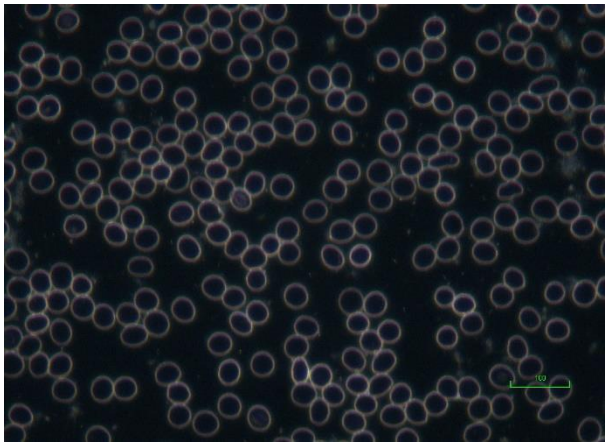
Concept of Zeta Potential is known in industry

The area of paints and pigments is another example. Whether a quantity of pigment added to a base paint will coagulate and form a speckled mess or disperse into trillions of tiny particles each remaining separate and discrete thereby leaving an even color, depends almost entirely on the electrical properties of the system

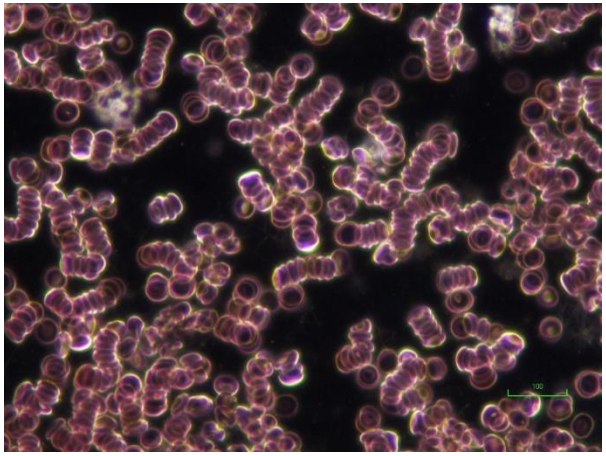
Concept of Zeta Potential is known in industry

In the industrial process of purifying water in treatment plants, zeta potential plays a crucial role. In order to get out pollutants, the treatment facility pours in a highly cationic substances like aluminum sulfate which attracts the garbage to itself thereby coagulating or flocculating out the precipitate. This floc becomes heavy and drops to the bottom of the holding tank thereby cleansing the water. (Note that if they miscalculate how much cationic aluminum to add to the water, some of that will stay in the water supply that arrives at your tap and this aluminized tap water is definitely not good for health as it coagulates elements of your own body fluids.)

Flow of Life



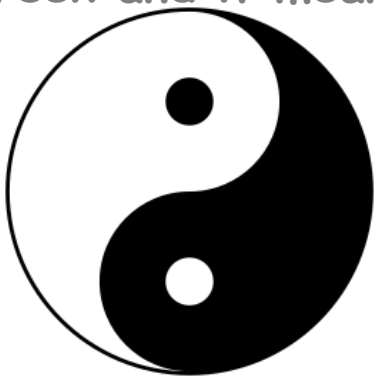
Flow = Life (good dispersion - Anionic)



No Flow = Congestion (poor dispersion - Cationic)

The suspended particles, the pH and the mix of ANIONS and CATIONS……. All determine blood's Rheological (flow) Characteristics

In blood, the amount of the suspended particles, the pH of the suspension, the mix of anions and cations, all determine the rheological characteristics. Rheology is the word that describes the study of the deformation and flow of matter. **Rheo is from Greek and it means <u>flow</u>.**



Did you know….

Most processed food is **Cationic** in nature?

Hmmmm…..

Electrolyte Deficiency

Imbalance

Electrolyte Deficiency Imbalance

Some Electrolyte Deficient biological markers

Resting systolic blood pressure is < 112

Standing diastolic blood pressure is < 73

Pulse is < 70

STRONG INDICATOR

The difference between resting pulse to standing pulse is > 12 (this is a strong validation that this imbalance is current).

Electrolyte Deficiency Imbalance

Very few doctors will ever complain about your blood pressure being low. Since there is no drug for low blood pressure, the ramifications are not in their training. We all know that high blood pressure can cause heart attacks and strokes (blowouts). When they say your blood pressure is great even though it's too low, they're saying that you'll never have a blowout. But is it fun to run around on flat tires all day

Electrolyte Deficiency Imbalance

When we see low blood pressure, for example, anything lower than a systolic reading (the top number) of 112 and a diastolic reading (the bottom number) lower than 73, we consider that there is likely an Electrolyte Deficiency Imbalance present (especially if the resting to standing pulse is greater than 12)

Electrolyte Deficiency Imbalance

Symptoms

Electrolyte Deficiency Imbalance

Some common symptoms of an Electrolyte Deficiency Imbalance

Chronic fatigue - Low blood pressure - Menstrual cramps Poor circulation - Decreased libido - Depression or anxiety - Vertigo or dizziness when standing – Cravings – Insomnia - Lack of self-assurance - Accelerated ageing – Anemia - Osteoporosis - Digestive Problems - Mental Disorders - Strong Cravings for sweet, salty or foods with carbs – Migraines - Loss of Coordination – Panic attacks – IBS – Crohn's disease – Constipation – Gerd – Colitis – Early menopause – ADD – ADHD – Bipolar disorder – Nausea – Addictions – OCD – PMS – Emotional instability – Auto immune issues - Cellulite

Electrolyte Deficiency Imbalance

Avoid with this Imbalance

- Avoid drinking too much water or being unconscious about water intake. This doesn't mean you don't need more water, you may. However, you need to qualify to drink more water. If you have a low amount of minerals in the system, drinking a lot of water will just wash away the small amount you do have. Work on correcting digestion and increasing your unrefined salt intake and then you can increase your water as your blood pressure comes up.

- Avoid drinking distilled water or tap water. Since distilled water contains no minerals, drinking it can wash minerals out without replenishing them. Chlorine and fluoride in tap water can also reduce minerals in the body since the body needs to use those minerals to help safely remove the chlorine and fluoride from the body.

- Avoid eating too many sugars and especially starchy carbohydrates. These foods can spike insulin levels and cause your blood sugar to drop too low, too quickly.

Electrolyte Deficiency Imbalance

Avoid with this Imbalance

- Activities that cause excessive sweating such has hot yoga.
- Diuretics such as coffee will make this problem worse (after an initial boost of energy as the sympathetic nervous system is 'fired up' resulting in a temporary rise in blood pressure).
- An Anabolic will pee most of water out through kidneys AND more minerals – causing blood pressure to be a little lower. This imbalance therefoere will need to be focused on at the same time.

Electrolyte Deficiency Imbalance

Implement with this Imbalance

- Correctly digesting your food

- Eating food. This means eating breakfast! Often because digestion is not functioning properly, understandably, many people skip breakfast. After all, why eat protein for breakfast when it's going to make you feel miserable for the next six hours? But if the mineral level is low because of poor digestion, as digestion is repaired, something needs to be given to the body to digest. Once the body sees that it has the ability to pull nutrients out of the food you're eating, the body is going to want more of that.

- Tomatoes and/or tomato sauce. Tomatoes have the ability to thicken your blood, thereby raising your blood pressure.

Electrolyte Deficiency Imbalance

Supplements that can help with this imbalance

Electrolyte Deficiency Imbalance

Electrolyte Deficiency Supplement Formulas

Specific supplements to help correct an Electrolyte Deficiency Imbalance:

NOTE: The most important factors with an Electrolyte Deficiency Imbalance are correcting digestion and adding more unrefined salt. Try to make these your priorities and add other supplements from below as secondary tools.

- Electrolyte Deficiency - 2 caps with each meal (Empirical labs)
- Auralife - 2 caps with each meal (Empirical labs)
- Trace Minerals Research, ConcenTrace, Trace Mineral Drops
- L-Glutamine - An amino acid – Avoid with an Anabolic Imbalance. L-Glutamine can be bought in powder or capsule form in just about any health food store. It's a good idea to use powder since many people use doses of a full teaspoon at a time. You would need to take a lot of capsules to equal one teaspoon. If you become constipated while using L-Glutamine, you could be using too much and may need to reduce your dose.
- L-Tyrosine - an amino acid. (Avoid at night and if you have a Catabolic imbalance).
- Zinc - Keep the dose low with an Anabolic Imbalance.
- Blackstrap Molasses (watch sugars)

Electrolyte Deficiency Imbalance

Supplements to Avoid with this Imbalance

- L-Arginine An amino acid
- Vitamin E

Electrolyte Excess

Imbalance

Electrolyte Excess Imbalance

When blood pressure is high, it's an indication of high amounts of minerals in the system. (Sugars and proteins are also in the mix.) High blood pressure is usually caused by high electrolytes (mineral/salts), sugars, or protein or any combination of those three.

Basically, high blood pressure can be an expression of insufficient, or lousy, kidney function, meaning that when excessive electrolytes become concentrated in the body fluids, it's usually a result of a lack of hydration (not drinking enough pure water), or impaired excretion of mineral salts. High blood pressure can also result from a constricted vascular system. In either case, electrolyte stress can lead to hypertension (high blood pressure) and other circulatory and cardiovascular problems.

Electrolyte Excess Imbalance

A vascular system that is constricted often points to an autonomic nervous system issue or a build-up on the arterial walls. Stiffening arterial walls can lift pulse pressure (which is the difference between the systolic and diastolic blood pressure numbers.) When the pulse pressure becomes greater and greater as the arterial walls become stiffer and stiffer, the heart becomes weaker and weaker.

Watching the pulse pressure correct itself helps to validate that you are doing the right thing.

This is why I use the >12 difference pulse pressure between resting and standing as a strong indicator that an imbalance is present.

Electrolyte Excess Imbalance

Some Causes of Electrolyte Excess

- Not drinking enough pure clean water to dilute the system.
- A catabolic imbalance where the body is sending too much water to the bowel and not enough through the kidneys.
- Kidneys becoming compromised.
- An autonomic nervous system disturbance, which can constrict the vascular system too much.
- Plaqued-up" arterial walls.

Electrolyte Excess Imbalance

Some common symptoms of an Electrolyte Excess Imbalance

- High Blood Pressure
- Circulatory Problems
- Cardiovascular Disease
- Hypertension

Electrolyte Excess Imbalance

Some Electrolyte Excess biological markers

Resting systolic blood pressure is > 130

Standing diastolic blood pressure is > 87

STRONG INDICATOR

The difference between resting pulse to standing pulse is > 12 (this is a strong validation that this imbalance is current).

Electrolyte Excess Imbalance

How to Improve this Imbalance

Change the aspects of your diet and lifestyle that are making this imbalance worse. These can include:

- Not using an unrefined sea salt with your food.
- Not properly digesting your food. Many adults do not have their digestion functioning optimally and they have no idea that there is even a problem.
- Drinking too little water
- Drinking tap water that is loaded with chlorine and/or fluoride
- Eating too many sugars or starchy carbohydrates
- Taking antacids
- Not eating enough green vegetables
- Eating polyunsaturated oils (such as mayonnaise, salad dressings, margarine and foods fried or cooked with vegetable oils -- olive oil is okay)

Electrolyte Excess Imbalance

Supplements that can help with this imbalance

Electrolyte Excess Imbalance

Supplements often used with this Imbalance

NOTE: Use water as a supplement FIRST. If you have an Electrolyte Excess Imbalance, odds are great that you are not drinking enough water. If you also have a Catabolic Imbalance, and if drinking more water gives you diarrhoea, first improve your Catabolic Imbalance; and then you may be able to increase your water intake without inducing a loose stool.

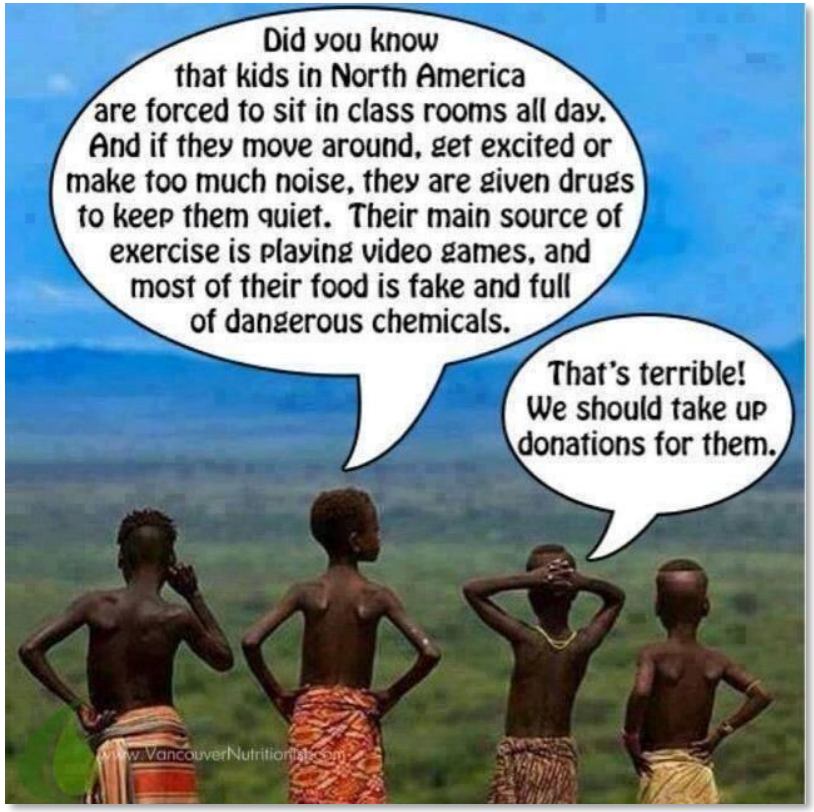
- Electrolyte Excess - 2 caps with each meal (Empirical Labs)
- L-Taurine An amino acid - Avoid with a Catabolic Imbalance. (Best taken in the morning, and near lunch.)
- Vitamin E Avoid with an Anabolic or Carb Burner Imbalance. (Best taken with dinner.)
- Auto S - (good if also catabolic) (Empirical Labs)
- Phosphoric acid -(good if also anabolic)
- Magnesium Chloride - (good if also beta slow oxidizer)
- Potassium Bicarbonate - (good if also tricarb fast oxidizer)

Electrolyte Excess Imbalance

Supplements to Avoid with this Imbalance

- Vitamin D3
- L-Glutamine An amino acid.

Q&A Session Next Week



Thank you for allowing me to share my passion with you today. I look forward to you joining me next week for my live Q&A session

Mark Hathaway

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