

ZYTO HYDRATION BIOSURVEY



Our bodies are made up of about 60% water, our blood is 85% water, our bones are 25% water, our brains are 75% water, and our muscles are 80% water. Dehydration happens when more fluid is lost or used than is taken in. The body doesn't have enough water to be able to carry out its everyday functions. Most people don't think that they are dehydrated—some probably think it's something that happens to people in the desert when they run out of water.

However, there is a chronic version that isn't sudden nor as severe. Roughly 75% of us suffer from chronic dehydration—a state of constant dehydration. It's incredibly widespread today and affects anyone and everyone who isn't drinking enough liquid—especially water. (1)

Signs and Symptoms of Chronic Dehydration

Signs and symptoms can differ by age. Many people, especially older people, don't begin to feel thirsty until they are already dehydrated—making thirst an unreliable indicator of chronic dehydration. The body produces saliva regardless if it's short on water or not.

1. Continuous digestive problems - For example, irritable bowel syndrome, acid reflux, or frequent constipation. Our digestive system depends on fluids that even slight dehydration can throw off balance.
2. Headaches - When the blood supply to our brain is reduced due to dehydration, our brain can't work properly because it depends on the blood supply to function. This often results in headaches because our brain is trying hard to still work while it has less blood supply.
3. Lack of focus, fogginess
4. Mental and emotional imbalances
5. Bad breath - Saliva contains antibacterial properties and prevents bacterial overgrowth in the mouth. When dehydration prevents the body from making enough saliva, bad breath occurs.
6. Fever - The hotter the body gets, the more liquid it's losing.
7. Muscle weakness - Dehydration plays with the salt and electrolyte levels in our bodies. Both of these compounds are needed to support our working muscles. When chronic dehydration occurs, it causes our muscles to weaken because they don't have the elements they need to work.
8. Muscle cramps
9. Slower metabolism - Our metabolism naturally slows down when it doesn't have enough water to help it process the food intake we have. Drinking just 16 oz. of water has been shown to increase the metabolic rate by 30%.
10. Troubles with weight loss - A slower metabolism causes our bodies to have trouble with weight loss. Dehydration also makes it difficult for our bodies to use fat as fuel, which is the way we lose weight.

11. Weight gain - Often we mistake what we think to be thirst as hunger. This is why many people might pick up snacks instead of a sip of water. Enough chronic dehydration and snacking could lead to obesity.

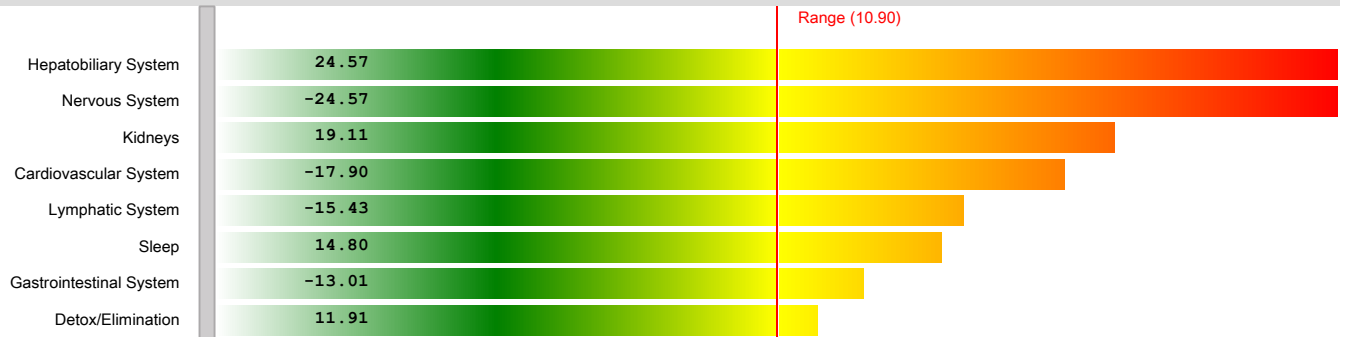
12. Acne - Water reduces the toxins in our kidneys and liver which leads to overall clearer skin.

13. Food cravings (specifically for sweets) - Organs like the liver, which uses water to release the stored glucose, can make you crave foods while dehydrated. The body has a hard time breaking down the glycogen (stored glucose) into the bloodstream to be able to use it for fuel.

14. Dry skin - People find that their skin is hard to moisturize, even with the best moisturizers, because they need to hydrate from the inside out. When dehydrated skin is pinched, it takes time to bounce back to its normal state. (1)

ORGANS, BODY SYSTEMS, & FOUNDATIONS MOST IMPACTED BY DEHYDRATION

Top Organ and Body System Stressors

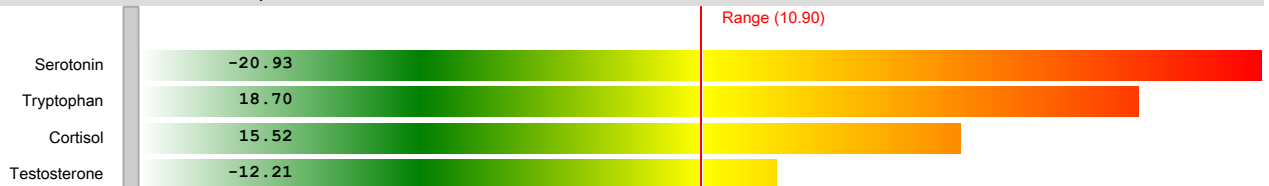


HORMONES & NEUROTRANSMITTERS MOST IMPACTED BY DEHYDRATION

When it comes to stress load, your body doesn't know the difference between being hydrated and running late to an appointment—stress is just STRESS! And so with this in mind, it's important to understand that not only does your body switch into famine mode when you are dehydrated and can't fully facilitate normal body functions, but adding more stress to the mix only pushes your hormone balance further away from its norm. Your sex hormones and your stress hormones crave balance. When your stress hormones are heightened, your sex hormones suffer as a means of priority. (2)

Furthermore, the body's neurotransmitters are greatly affected by dehydration. Dehydration is linked to diminished energy in the brain. It can also lead to a decrease in serotonin levels, which can cause depression, irritability, and anxiety.

Top Hormone & Neurotransmitter Responses



OTHER STRESSORS THAT PROMOTE DEHYDRATION

1. Stress - This is a double-edged sword—dehydration can cause you to deal with stress less effectively, while stress can also cause dehydration. Having a glass of water can lower the level of the stress hormone cortisol.
2. Alcohol Consumption - Alcohol is a diuretic, just like some of those prescription meds. Drinking four, 2-ounce shots of liquor can cause you to urinate 1 quart of liquid. Let's do a little math here: a quart is 32 fluid ounces, which is almost 4 times the amount of liquor in this case.
3. Lack of Fruits and Vegetables in Your Diet - Half a plate of produce included with each meal is the equivalent of drinking two glasses of water. You need 5 portions of fruits and veggies a day, otherwise you need to step up water consumption or you could end up promoting dehydration.
4. Sugary Drinks - Drinks that are high in sugar create an acidic environment in the body, impeding enzyme function and straining the kidneys. This basically means that while sugary drinks may quench your thirst initially, the sugars and artificial sugars are siphoning out your body's water storage by making your organs work harder to process them. (3)
5. Prescription Medication - Read the label on your prescription medications. Many of the side effects include dehydration. Blood pressure medications are one of the worst. Also, any drug that lists vomiting or diarrhea as a side effect can also end up causing dehydration. Be sure to increase your fluid intake if any of the side effects say that dehydration is a possibility. (4)
6. Coffee/Caffeine - While enjoying a cup or two of joe in the morning is fine, overdoing it on the caffeine can pose a dehydration risk. Per a French study, caffeine has a well-known diuretic effect and can inhibit sodium re-absorption. So you can still enjoy your latte, but be sure to limit your consumption to 400 mg of caffeine daily and avoid using sugar or artificial sweeteners. (5)
7. High-Protein Meals - Eating high-protein meals is a great way to stay full and energized while building muscle, but overdoing it on protein can lead to dehydration. Researchers found that when athletes consumed the highest amount of protein, their kidney function became abnormal; but when they cut back on protein, their kidney function returned to normal. This isn't reason enough to nix a protein-rich diet, but it shows that you should increase your water intake when you up your protein consumption.
8. Cured Meats - Cured meats are dehydrating because they're loaded with salt and sugar that will suck water right out of your body. If you want to curb your sodium intake, eliminate cured meats from your diet and stick to lean, grass-fed meat instead.
9. Salty Snacks/Fried Foods - Fried foods are hidden sources of salt, as are most snack foods. When you consume too much sodium in your diet, your body holds extra water. That's because the kidneys, which filter out waste from the blood, maintain a special ratio of electrolytes, such as sodium to potassium to water. More salt in the diet means that the kidneys keep more water in the system. That can have lots of undesirable effects, such as edema (swelling in places like the hands, arms, feet, ankles, and legs). More fluid in general means more blood coursing through veins and arteries. Over time, that causes them to stiffen, which could lead to high blood pressure.

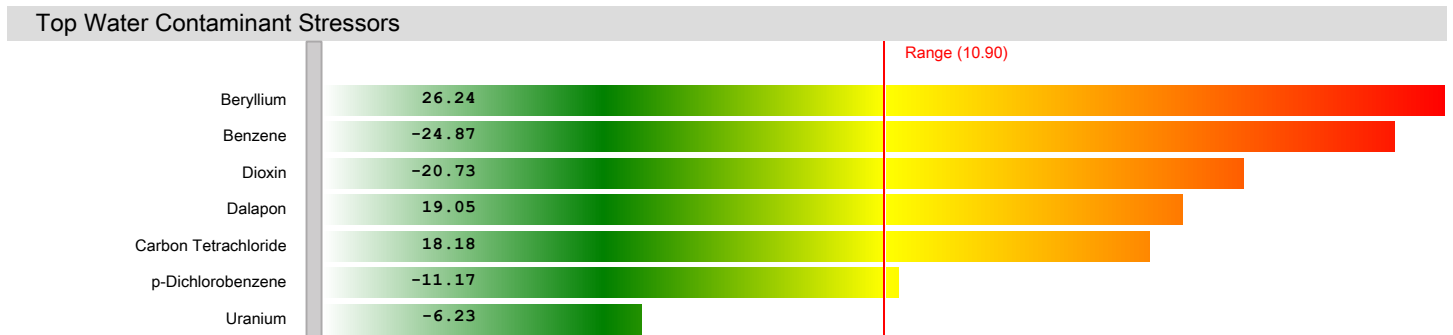
Other Top Stressors



WATER CONTAMINANTS

Hydration isn't just about getting enough water. It's also important to drink water that is free from contaminants that promote health risks. Also, make sure if you are drinking filtered water that you change those filters on the recommended intervals. Educate yourself on the types of bottled water that are truly the best. And make the best choice whenever possible.

The water contaminants scanned for in this biosurvey have been identified by the EPA as the top water contaminants that most often pollute our water.



ELECTROLYTES NECESSARY FOR PROPER HYDRATION

Why are electrolytes important? When you sweat your body loses both fluid and electrolytes. If you don't begin your workout properly hydrated, and/or you aren't hydrated properly during your activity, dehydration can occur through the act of sweating. Electrolytes also help make the most of your water, which is the key to proper hydration.

1. Sodium – maintains fluid balance

Sodium is the most important electrolyte to monitor during exercise. Excessive losses of sodium (via sweat) can lead to muscle cramps, and in some cases hyponatremia (low blood sodium)—both can lead to a decrease in performance, and can cause major health complications. Sodium is critical for maintaining fluid balance, nerve function, muscle contractions, and acid-base balance. Sodium losses in sweat are greater than any other electrolyte. Therefore, it is crucial to maintain an adequate balance, both during your activity and after.

2. Potassium – prevents cramping

Potassium in conjunction with sodium helps alleviate and prevent muscle cramps. Potassium is abundant in many food sources, and the average individual has high stores within the body. In sweat, potassium losses are not as high as sodium, therefore making it highly unlikely that losses in potassium (alone) can cause a decrease in performance. With that said, it is still crucial to maintain potassium levels while exercising as it will be critical for a healthy water & electrolyte balance.

3. Calcium – regulates muscle contractions & heart rhythm

Calcium is the most abundant mineral in the body. It serves many roles, both in normal bodily functions and athletic performance. When calcium is circulating within the bloodstream, it has a major impact on metabolism of essential nutrients and proper physiological functions. It is well documented that calcium is essential for bone and muscle health. Calcium is also involved in all types of muscle (heart, skeletal, and smooth) functions and contractions. Calcium is involved in the synthesis and breakdown of muscle and liver glycogen (fuel stores).

4. Magnesium – relaxes muscles

Similar to how sodium and potassium function together, magnesium and calcium do the same. Calcium is essential for muscle contractions; magnesium aids in helping muscles relax. Therefore, the combination of magnesium and calcium is critical for healthy muscle function. Magnesium also aids in glucose metabolism, and is used in many enzymatic reactions.

5. Bicarbonate – may delay fatigue & enhance endurance

Sodium bicarbonate is an interesting nutrient that has some compelling theories behind its use for athletic performance. One of the key benefits of having fluids that contain sodium bicarbonate is that it buffers lactic acid in the blood. During intense exercise, lactic acid builds up which stresses the anaerobic glycolysis energy system. When this energy system becomes disrupted, the acid accumulations inhibit muscle contractions, which leads to fatigue. Some research has shown that sodium bicarbonate intake can help delay the onset of fatigue and enhance endurance capacity.

6. Phosphate – plays a key role in strengthening bones and teeth

Phosphate is important in manufacturing proteins that the body uses to grow and repair cells. It is the critical anion that balances out calcium and is critical for energy production as well as bone integrity and function. Too little phosphate results in joint pain, weakened bones, fatigue, and irregular breathing. Too much leads to similar symptoms as too little calcium (i.e., muscle cramps, confusion, and tingling in the lips and fingers).

7. Chloride – critical for the electrical neutrality of most fluids in the body (especially extracellular fluid), and helps control water levels

Too much or too little chloride is evidenced by excessive fatigue, muscle weakness, breathing problems, frequent vomiting,

prolonged diarrhea, excessive thirst, or high blood pressure. (7)

Electrolyte Balancer Responses

- 18.77 **Bicarbonate (HCO₃-)**
- 8.98 **Phosphate (HPO₄-)**
- 5.35 **Calcium (CA)**
- 5.27 **Chloride (Cl-)**
- 4.13 **Sodium (Na+)**
- 3.61 **Sulfate**
- 5.13 **Magnesium -vi**
- 17.29 **Potassium (K+)**

HERBS THAT PROMOTE HYDRATION

Herb Balancer Responses

- 11.77 **Skullcap**
- 10.40 **Slippery Elm**
- 7.14 **Yarrow**
- 5.53 **Licorice**
- 4.97 **Elderberry / Elderflower**
- 3.79 **Fenugreek**
- 2.91 **Marshmallow Root**
- 4.14 **Chamomile**
- 5.75 **Coconut Water**
- 6.30 **Willow Bark**
- 10.33 **Asparagus**

HOMEOPATHIC CELL SALTS THAT PROMOTE CELLULAR HYDRATION

Dr. Wilhelm Schuessler, a German doctor, established the theory of Biochemic medicine in 1873. Dr. Schuessler combined the principles of biochemistry with homeopathy to give us the 12 safe and natural Cell Salts, each derived from one of the 12 inorganic mineral compounds most important to our cellular health.

Cell Salts stimulate the body's natural healing mechanisms to satisfy mineral imbalances. In his biochemic theory, Dr. Schuessler, the discoverer of Cell Salts, states that deficiencies in these minerals are the source of common health problems and the Cell Salts derived from these minerals give the body what it needs to achieve wellness. Cells hydrate faster when the 12 cell salts are present by enhancing the intercellular electrical activity. This promotes faster transport of minerals and other nutrients into the cells which improves cellular hydration. (8)

Cell Salt Balancer Responses

- 16.07 **Calcarea sulphurica**
- 10.41 **Calcarea fluorica**
- 8.53 **Kali phosphoricum**
- 5.97 **Silicea**
- 5.06 **Natrium muriaticum**
- 4.00 **Natrum sulphuricum**
- 3.79 **Magnesia phosphorica**
- 3.07 **Ferrum phosphoricum**
- 4.11 **Kali sulphuricum**
- 7.84 **Calcium Phosphate**
- 10.73 **Kali muriaticum**
- 12.19 **Natrium phosphoricum**

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