How to harness electrolytes for balanced health

By **Jack Challem** | ***Delicious Living***

In this article:

Electrolytes power your muscles and much more. In this article we learn how to keep them in balance.

Your body teems with electricity, albeit at a very low level. Calcium, magnesium, potassium and sodium are your primary electrolytes, meaning that each of these minerals carries an electrical charge that influences how they work and interact with cells.

An electrolyte imbalance or deficiency in these minerals can cause serious health problems, even death. For your heart to beat, calcium sends a charge that contracts your heart muscle, and magnesium sends a charge that relaxes it. When you exercise, you lose electrolytes in sweat, especially potassium and sodium. That's why smart athletes are quick to replace this loss with electrolyte-containing sports drinks, such as potassium-rich coconut water.

"Sometimes people consume too much of one type of electrolyte, such as calcium or sodium, and not enough of others, such as magnesium and potassium," says Michael Miles, NMD, of Tucson, Arizona. "It's important to get enough of the latter through food or supplements."

Electrolytes have myriad other functions, such as maintaining strong bones and the body's fluid balance.

Calcium

The body's most abundant mineral, calcium is mostly found in bone. Bone isn't a static tissue—old cells continuously get replaced with new cells and fresh calcium. However, some doctors question whether people take too much calcium. Thomas E. Levy, MD, author of Death by Calcium (Medfox, 2013), points out that vitamin C regulates the formation of the bone matrix (minerals and protein) and contends that low intake of this vitamin is a bigger factor in osteoporosis than low calcium.

Dose: The RDA for adults is 1,000–1,200 mg daily, but you can get much of that in foods, including vegetables and dairy. Consider modest supplementation, such as 500 mg daily of calcium citrate or carbonate. Add 5,000 IU vitamin D to aid calcium absorption.

Magnesium

Often overlooked, magnesium is the second most abundant mineral in bone. However, its roles are multifaceted, playing parts in more than 300 enzyme reactions affecting muscle production, nerve function, blood sugar regulation and blood pressure. Carolyn Dean, MD, medical director of the Nutritional Magnesium Association, points out that muscle twitches and spasms (think cramps or charley horses) are a common sign of magnesium deficiency. The mineral often helps with muscle tightness caused by stress and hyperactive behavior.

Dose: The RDA for adults ranges from 310–420 mg daily. A good target is 400 mg of magnesium daily in divided doses. Too much at once can have a laxative effect.

Potassium

You lose a lot of potassium in sweat, and chronically low levels can contribute to hypertension and heart rhythm abnormalities. Unless you eat a lot of fruits and veggies—the richest potassium sources—there's a good chance you're low in this mineral. The problem can be compounded by taking loop diuretic drugs, which hasten potassium excretion. And drinking too many sugary cola drinks also depletes potassium, leading to muscle weakness, fatigue and in some cases paralysis. Taking potassium bicarbonate can counter osteoporosis, and it also reduces the body's calcium loss.

Dose: Follow label directions. People with kidney disease or low levels of the hormone aldosterone, or who take heart medications, should not exceed 99 mg potassium daily from supplements except under a doctor's guidance. Too much can also cause an abnormal heartbeat and cardiac arrest. Most multimineral supplements contain safe amounts of potassium, but the bicarbonate form may be preferred. The richest sources of potassium, however, are vegetables and fruits, and their intake is safe.

Sodium

Too much sodium causes high blood pressure, right? Not so fast. A recent government report downplayed the role of sodium because of conflicting research. Studies going back 25 years suggest that excess sodium is only part of the problem, mainly because only about half of people with hypertension are salt sensitive. Low levels of other minerals, such as potassium and magnesium, may also be contributing factors. And the other half of the salt molecule—the electrolyte chloride—might be a bigger problem.

Dose: You don't need to increase salt intake unless you exercise in a very hot climate.

Main minerals for balance

Relatively few mineral supplements emphasize the role of calcium, magnesium, potassium and sodium as electrolytes. That may be because these minerals have diverse roles in health.

That said, electrolytes do have a higher profile among sports supplements.

Natural Vitality Natural Calm

Top-selling Natural Calm took the industry by surprise as a mix-and-drink magnesium supplement. It is made by blending a highly absorbable form of citric acid and magnesium carbonate. Two teaspoons mixed in water provides 350 mg magnesium.

Ola Loa Sport Hydration Drink
Each mix-and-drink pack is a souped-up multivitamin/mineral with 200 mg potassium bicarbonate. It also contains 100 mg magnesium, 50 mg calcium and 40 mg sodium bicarbonate. Sweetened with a tiny amount of fructose, cane sugar and stevia.

Emergen-C ElectroMIX
The makers of Emergen-C released this specialty formula mix of potassium, calcium, magnesium and manganese. Mix the pack of lemon-lime flavored powder with 1 liter water to replenish and rehydrate during or after a workout.

Source: ***Delicious Living***