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Balancing Act

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Electrolytes are responsible for maintaining proper fluid balance within cells.

Many people hear the word “electrolytes” but have no idea how necessary they are to good health. Electrolytes are minerals capable of transmitting electrical charges within fluids.

This function, as well as the reciprocal relationship between water and electrolytes, is extremely important since 50 to 75 percent of the average human body is made up of water and other fluids.

Within our bodies, electrolytes are transmitters for the 100 million or so messages per second relayed within the nervous system. Electrolytes are necessary for all brain functions: Without these electric transmissions, the brain could not stay in control of the body’s many functions. Every time one of our thousands of muscles contracts or relaxes, electrolytes are in use. They are responsible for maintaining proper fluid balance within the cells. In fact, every one of our trillions of cells relies on electrolytes for the transportation of nutrients and waste.

In short, electrolytes are responsible for the basic metabolism of every cell in the body. It makes sense then that we can optimize health and vitality by maintaining optimal levels of fluids and electrolytes in our diets.

Our bodies normally excrete water and electrolyte solutions at an average daily rate of 1,300 millilitres (ml) through urination; 600 ml through perspiration, and 200 ml through feces. Other factors that increase our need for electrolytes include pregnancy, poor diet, dehydration, use of diuretics (including coffee and other caffeinated drinks), disease, exertion, vomiting, diarrhea, trauma, and excessive perspiration. When our bodies thirst for water, we almost certainly also crave electrolytes.

Last September, the unfortunate death of a four-year-old Utah girl, reportedly caused by forced consumption of excessive water, made international news. In fact, it was not water that caused her death, but, rather, the dilution of essential electrolytes. There have also been numerous high-profile cases among top athletes who have died suddenly of cardiac

Balancing Act

arrhythmias, usually linked to electrolyte instability. Prominent signs of electrolyte imbalance or deficiency include muscle weakness, cramps, swelling, slowed nerve conduction and muscle function, and general weakness and apathy.

Electrolytes are essential for people of all ages and all physical conditions. Deficiencies or imbalances are almost universal, but are difficult to reverse by diet alone since our foods are generally overprocessed and grown in mineral-deficient soils. Fortunately, electrolyte balance can be easily restored by taking quality supplements. Look for supplements at your local health food store with a balance of major electrolytes and other trace elements, adequate concentration, and minerals that are either ionic or easily become ionic in water. Ask your health food store personnel for recommendations and notice the difference improved electrolyte balance can make to your health.

Major Electrolytes

The body's major electrolytes are sodium, potassium, calcium, and magnesium as positively charged ions (cations), and chloride, bicarbonate, phosphate and sulphate as negatively charged ions (anions). Any mineral or trace element in ionic form is capable of functioning as an electrolyte; however, it is imperative to understand that not all of the various forms of minerals (elements) or trace minerals available as supplements are capable of becoming electrolytes within in the body.

Minerals become electrolytes in solutions when they are completely disassociated from their compounds. In other words, minerals become electrolytes or ionic when they are truly dissolved, not just suspended in liquid. As ions, they are either missing or have an extra electron, giving either a positive or negative charge. Only minerals that are already ionic, or those capable of becoming ionic through digestion, can perform the vital roles of electrolytes.

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