

## Are Electrolytes Important for My Performance Horse?



I live in the Southeast where the summer months can be awfully hot and humid. Should I be prepared to give my horse electrolytes on the days I compete?

Name withheld by request

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The typically hot climates where horse shows are commonly held lead to increased sweating and an increase in sympathetic tone, which amplifies overall water and electrolyte loss, resulting in dehydration.

The horse's body is a complex and carefully balanced system comprised of different types of cells, tissues and fluids that continuously direct an array of electrical impulses. The fuel for this fundamental life process lies within the electrolyte. When you think of a happy, healthy horse, he is one who is eating, drinking and passing manure appropriately. Electrolytes are essential to achieve and maintain this. The main electrolytes found in the horse's body are sodium (Na), chloride (Cl), potassium (K), magnesium (Mg), calcium (Ca), hydrogen phosphate (HPO<sub>4</sub>)<sub>2</sub> and hydrogen carbonate (HCO<sub>3</sub>).

Electrolytes are chemicals that when dissolved in a polar solvent such as water, form electrically charged particles called ions. An average, 1,000-pound horse is made of 65 percent water, making it the perfect environment for the electrolyte to perform its physiologic duties. Some of the physiologic functions electrolytes play a part in include, but are not limited to, temperature control, fluid transport across


cell membranes, muscle and heart contraction, respiration, digestion, ion transport, renal function, neurological function, signal transduction, thought and memory processes, energy production, glucose metabolism and all the senses—both gathering information and then transporting that message to the brain and to the muscles, enabling everyday function and the innate fight or flight responses of the horse.

With all these details in mind, the ultimate goal of maintaining your performance horse is achieving a balance. When there are imbalances, we run into trouble. Electrolytes are naturally lost daily through sweating, feces and urine. Some signs you can look out for

that your horse may be deficient in electrolytes are poor performance, depression, dull hair coat, sunken eyes, eating dirt or other horses' feces, tying up, weight loss or even ulcers. Common causes of electrolyte imbalance are dehydration, diarrhea, sweating, strenuous exercise and insufficient consumption of bio-available minerals.

Electrolyte balance is often achievable by offering good-quality forages and a balanced commercial feed, which are both high in electrolytes. With a proper diet alone, the majority of normal horses are able to easily replenish their routine losses. This does not hold true for the performance horse. A performance horse who is training six days out of the week on average naturally sweats more than the average horse. If he is sweating more, he is losing more electrolytes, which cannot be replaced by diet alone, making electrolyte supplementation an imperative component of your horse's success. Remember, one of the main functions of electrolytes is to regulate nerve and muscle function by carrying electrical impulses. Optimal muscle health and neurons communicating appropriately increase the performance potential of any horse. Additionally, providing a free-choice salt block allows horses to naturally balance themselves.

Horses are creatures of habit and thrive on consistency. Ideally, when supplementing electrolytes, you should give the same amount of powder or paste orally on a daily basis. This enables the horse to utilize what he needs to maintain homeostasis, and what is not needed will naturally be excreted. Electrolytes should never be "loaded," as you may create an excessive imbalance and will inadvertently create an osmotic pull of water in the body to "go the wrong way," causing dehydration. This principle of the osmotic pulling of fluids is why it is imperative to always give electrolytes with water and provide your horse with free-choice water.

Electrolyte supplements are an easy and cost-effective way to provide balance within the body. When choosing a supplement, select one that contains the essential electrolytes, and has low sugar content. The value and impact electrolytes have on your horse's health and potential for peak performance are huge—and often missed—details that should not be overlooked in the future. 

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