



FEED FOR THOUGHT

ELECTROLYTES

WHAT ARE THEY AND WHY ARE THEY IMPORTANT?

Now that we are in the full swing of summer, many horse owners have incorporated electrolytes in their horses' diets. But, what are electrolytes and why are they important? Technically, electrolytes are any mineral that has an ionic charge and dissociates, or becomes separate, in water-based fluids. Table salt, or sodium chloride, will dissociate in water into sodium (Na^+) and chloride (Cl^-) atoms in water and dissolve. Other examples of electrolytes are potassium (K^+), magnesium (Mg^{2+}), and calcium (Ca^{2+}).

In the body, electrolytes are critical for neuromuscular function including nerve signals and muscle contractions. The levels and ratios of different electrolytes and water in the system are critical not only for performance in the show ring, but also for the kidneys, heart, and brain. When these levels and ratios are off, it is referred to as "water-electrolyte imbalance". Some symptoms of a water-electrolyte imbalance include irregular heartbeat, low or high blood pressure, muscle weakness, muscle twitching, and fatigue.

An easy conclusion that may be made by a horse owner would be to supplement the horse with an electrolyte, but that can actually cause an imbalance as well, particularly if the horse is already dehydrated. While salt can be used to encourage a horse to drink with a thirst response, encouraging salt consumption in an already dehydrated horse that is reluctant to drink can further dehydrate the horse. One of the easiest ways to cause a water-electrolyte imbalance is through overconsumption of electrolytes, which may be accidentally done by an overzealous horse owner. On a day-to-day basis, free-choice access to a plain, white salt block is all that is needed for a horse to replace what electrolytes are lost through urine and sweat during normal weather conditions.

The goal of electrolyte supplementation is to replace what electrolytes are lost due to profuse sweating. The proper way to use electrolytes is to only administer it when the horse has already lost electrolytes, such as after exercise or traveling. By administering an electrolyte after exercise instead of before, one only replaces the lost electrolytes without risking over-supplementation, which can inadvertently cause a water-electrolyte imbalance potentially leading to dehydration, kidney stress, and impaired performance. And, unlike many other nutrients, electrolytes cannot be stored and saved for later use. If the horse cannot use the electrolytes then, the body immediately begins to try to expel the excess electrolytes to avoid a water-electrolyte imbalance. This can actually cause further dehydration since the horse will often need to urinate more to rid itself of the excess electrolytes.

Horses are excellent sweaters and a horse will lose quite a bit of water, sodium, chloride, and potassium in this sweat. It is the responsibility of the horse's caretaker to make sure these are replaced by administering Cavalor® Electrolyq Balance or Cavalor® Electrolyte Balance after exertion along with plenty of fresh, cool water. Both of the electrolytes made by Cavalor® contain appropriate ratios of sodium, chloride, and potassium to best replace what electrolytes are naturally lost in sweat and should be given after every significant work-out.

NRC. 2007. Nutrient Requirements of Horses (6th Ed.). National Academy Press, Washington, D.C.

Marlin, David and Kathryn Nankervis. *Equine Exercise Physiology*. Hong Kong: Blackwell Science LTD, 2002. Print.