

There is almost nothing as tedious as an article on electrolytes, so I will attempt to make this as interesting and practical for riders as possible. Since we are skipping the long and excruciating physiology lecture, I will quickly remind you of what electrolytes are and what they do.

We generally come across electrolytes in the form of salts where two particles with opposite charges, called ions, are held together by their electrical energy. Sodium chloride, or regular table salt, is a common example. Other important electrolytes include calcium, magnesium, potassium, hydrogen and phosphorus. Bored yet? What they do is more interesting, I promise. They are important in just about every aspect of our lives and our sport including allowing contraction and relaxation of muscles, nerve conduction, cardiac rhythm, hydration, fluid balance and thermoregulation. As these ions cross in and out of the cells of various tissues they are responsible for electrical conduction and fluid shifts within the tissues of the body thereby regulating almost every aspect of physiology.

Electrolytes are generally found in the diet and in supplements that we offer like salt blocks, loose salt and the concentrated oral pastes that we give during endurance exercise. In response to physiologic stress the kidneys, with the help of hormones, can regulate how these electrolytes are used most effectively. In a complex system of chemical reactions our endurance horses' bodies work to compensate for extreme electrolyte and fluid losses from profuse sweating. Combine those losses with getting to the ride site already dehydrated, stress, extreme heat or cold, humidity, not eating and drinking enough and maybe even a gastric ulcer or two and we have potential for some real metabolic problems.

In an attempt to head off these risks many of us supplement electrolytes during a competition. Our efforts to maintain hydration and electrolyte balance during and after a ride may help us to become more successful in our races, going faster or farther than before. Others of us who have witnessed or experienced metabolic problems in our horses are simply trying to avoid disaster.

But what is the best way to go about supplementing electrolytes? How much of what product should we use? Are we really helping? Are we actually causing harm in some cases? It seems that the more we learn about electrolytes the more we generate questions. Welcome to the world of science!

We know that supplementing electrolytes stimulates thirst and that has obvious value. If horses have more concentrated electrolytes in their bloodstream, especially sodium, their thirst centers are stimulated and they will drink more. We also know that electrolytes have been shown to promote faster recoveries after a ride. If you think about each loop of a competition as a mini endurance ride, each hold time can be seen as a chance to recover before the next one.

So, most riders give electrolytes the night before, during and after a ride. That is reasonable, but is it necessary? It is suggested that you use only electrolytes specifically formulated for endurance horses' specific requirements. Also, try over time to gain some understanding of what your horse needs as a unique individual. What will he eat or drink on his own? What does he tolerate? What does he resent? How do the electrolytes affect him, both in positively and negatively? Start thinking about it.

Some people only use concentrated pastes at the holds, while others administer them hourly on the trail as well. Because some horses require more supplementation than others you may find that it is necessary to carry some with you on the trail if you will be out longer than an hour. Your trail buddies may skip it. Maybe their horses don't need it or maybe they don't know if they need it or not! Don't get swayed by what everyone else is doing, just take care of your horse the best way that you know how.

Concentrated electrolyte pastes can cause dramatic ulceration of the GI tract in some horses from the oral mucosa to the stomach and beyond. After repeated administration of concentrated pastes you might see swelling, redness and even ulceration in the mouth. If your veterinarian looks farther downstream with an endoscope, you might find that you have at least contributed to, if not caused, gastric ulceration. To offset some of these risks it is suggested that you mix the electrolytes with a buffer or at least dilute them with something that will ease the intensity of the paste a bit. Rinsing the horse's mouth out after giving the paste is good idea too. It encourages them to swallow that last dose they have hidden in the back of their mouth, and it also washes the irritating salts off of the sensitive tissues of the mouth.

Another option for administration is top dressing the horse's feed with a palatable form of electrolytes. This is usually a powder with lots of sugar added. Use caution here because again, you may cause oral irritation. Even worse, you might discourage them from eating which will certainly cause trouble. Most riders will only use this route of feeding electrolytes the night before and the night after a ride. Just use common sense here. Don't do it if they won't eat it.

A potentially better method of giving electrolytes is to offer a sort of equine sports drink. By mixing electrolytes with water to create a similar concentration to that of the bloodstream, we may be looking at the best method to get electrolytes safely into our horses. Some formulas give diluting instructions on their labels or you can try starting with about 2 tablespoons of powder in each gallon of water. Go ahead, taste it. Is it palatable? Mixing up the powdered formulations that have added sugars makes a fairly tasty concoction that many horses will drink right up. Think about the difference between drinking a sports drink and eating a big spoonful of salt. Which would you prefer? A key training tip is to offer electrolyte water at home, especially after training rides, to get them used to the idea. Plain water also needs to be offered at all times, but you may find that they prefer the salty water. Have two buckets waiting at the crew area, one plain and one with electrolytes added and see what happens. You might be surprised to find that they will go for the sports drink.

In deciding how to supplement electrolytes for your horse stay open minded. Reevaluate your situation frequently, possibly even at every hold! Be willing to make changes as they are indicated. We are lucky to have the availability of blood analyzers at many rides these days. While electrolytes shift in and out of the bloodstream, often faster than we can catch them with a needle and syringe, there is great value in sampling your horse's blood throughout a competition. You can see overall trends, where you are doing well and where you might need to supplement a bit more or less. Some very successful endurance horses compete without any electrolytes given at all, while others need lots of help along the way. Do some of your own research to find out what is best for your horse. Ask around, talk to the vets, read articles, and take everything you find out with a big grain of salt!