

Salt Deprivation-More Common than You Think

By Claire C. Cox-Wilson RN, BA

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Cisco, from Forever Home Donkey Rescue in Benson, satisfies his salt craving.

Is your horse's stamina not what it should be? Does he seem to just run out of gas? In the summer, is your horse worn out before you are? Is he getting adequate amounts of salt? Did you know that as little as 2-3% dehydration can lead to a 10% drop in performance?

Sodium, the major electrolyte in the body, along with lesser amounts of chloride, bicarbonate, phosphate & sulfate groups plus small amounts of calcium and magnesium is essential for a host of body functions. An electrolyte is any mineral in a free or ionized form- not attached to a protein. The production and secretion of sweat, saliva, urine and mucus, intestinal tract fluids, as well as heart contraction and maintenance of normal acid-base balance & hydration are just a few of the body's functions dependant on electrolytes.

All forages and most bagged feeds are rich in potassium, but unfortunately notoriously low in sodium. The minimum sodium requirement for a horse is .02 grams per kg of bodyweight. An 1100 pound horse at maintenance requires 10 grams of sodium a day. Maintenance requirements mean just that, & do not include sweat losses. A plain salt block (not a brown mineral block which is high in iron) is fine if your horse actually consumes it. An 1100 pound horse would have to consume a 2 pound salt block a month to meet minimal requirements. Adding table salt to your horse's feed is the simplest way to make sure his minimum requirements are met. On days when your horse is sweating just standing around, an extra tablespoon or two of salt wouldn't hurt. Excess salt is easily & efficiently excreted by the kidneys. Of course, it goes without saying (but I'm going to anyway) that your horse should always have access to clean drinking water.

One ounce (approx. 4 teaspoons) of iodized salt contains: 11.2 g of sodium 17.2 g of

chloride 1.84 mg of iodine

A good rule of thumb is one ounce in the winter & two ounces in the summer for an 1100 pound horse. This should meet minimum requirements for sodium & chloride.

However, even at 2 ounces of salt, iodine requirements will not be met. Iodine's only known function in the body is for thyroid hormone production. Thyroid hormones are primarily responsible for regulation of metabolism. The current recommendation for iodine set by the National Research Council is 3.5 mg a day for a 1000 pound horse. Because iodide-treated table salt slowly loses its iodine content through the process of oxidation, only count on it to provide 1 mg per ounce. An additional 1.5 to 2 mg of iodine added to their feed is a good idea. Be careful when you supplement iodine to always use a product with a guaranteed analysis listing the iodine level. The most common cause of iodine toxicity is feeding free choice kelp with unknown amounts of iodine.

When to reach for the Electrolytes?

If a horse is exercised for more than 2 hours then an electrolyte supplement is in order. Use an electrolyte supplement that is formulated to meet sweat losses, not all of them are. You want a correctly balanced electrolyte formula that contains twice as much chloride as sodium and a potassium level slightly less than the sodium level. I recommend Peak Performance Perfect Balance Electrolyte and Summer Games Electrolyte by Kentucky Performance Products. Both meet the above criteria. Just make sure that your horse's salt maintenance requirements are met first. Electrolytes should be given to replace sweat losses, not as a substitute for salt.

If your 1100 pound horse's baseline sodium requirement of 10 grams has not already been met, electrolyte supplementation won't come even close to meeting the horse's true total requirements.

What about Those Expensive Salts?

I'm not going to name any of these salts but you know which ones I'm talking about. What I have to say about these salts will not win me a popularity contest. There's nothing about these salts that makes them a healthier choice. They are the same unrefined salts used to make purified table salt. Iron (which gives them the pretty pinkish color) is the only mineral contained in these salts in high enough amounts to make any difference at all. The horse has no active way of excreting iron, which is why iron overload in the equine is very real & much more common than we might think. Levels of other minerals are way too low to offset the iron or contribute to the diet. However, it is interesting to look at the list of over 50 natural minerals found in these salts, minerals like aluminum, arsenic, tin, titanium, lead, to name a few. These do not play any natural role in the body & some like lead & aluminum can be toxic. Don't take my word for it--google them. In truth, you are paying premium prices for the raw, dirt contaminated material from which we get table salt. Pure uncontaminated salt is white.

A word about sea salt. The main concern with sea salt is contaminants like mercury.

Some final tips:

-If your horse is sweating at rest, in addition to his 2 ounces of iodized salt with his meals, you might try hanging a bucket with plain (not iodized) loose salt in his stall/paddock. Sodium is the one nutrient that horses will crave & seek.

-Some horses may have trouble adjusting to a salty meal. In these cases proceed slowly. Start with a teaspoon & increase slowly to your horse's daily requirement.



Doc eats his supplements, including 2 ounces of salt

References/Resources

Dr. Eleanor Kellon's "NRC Plus" course

<http://www.balancedequine.com.au/nutrition/electrolytes.html>

<http://www.understanding-horse-nutrition.com/sodium.htm>

Information on Dr. Kellon's on-line courses <http://www.drkellon.com>

About the author:

Claire C. Cox-Wilson is a moderator & longtime member of the on-line Equine Cushing's & IR Group and several of its sister groups. Claire, a retired RN with fifty years of experience as a horseowner & a graduate of all of Dr. Kellon's equine courses assists horseowners throughout the US with nutrition & diet balancing.

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