

Electrolytes

Are they necessary?

How much does my horse need?

By The Nude Horse (Equine Epidemiologist)

Did you know a horse not in work loses up to 10 litres a day in sweat! That means losses of 10 grams of Sodium, 10 grams of Chloride, 25 grams of Potassium and 10 grams of Magnesium!

A horse in mid-range work sweats by comparison 27-43 litres a day. That means losses of up to 43 grams of Sodium, 71 grams of Chloride, 43 grams of Potassium and 13 grams of Magnesium.

Signs of electrolyte deficiency & heat stroke include:

- * Fatigue
- * Exhaustion
- * Impaction colic – constipation
- * Dull coat
- * Slowed rates of chewing
- * Uncoordinated chewing
- * Sunken eyes
- * Weight loss
- * Unsteady gait
- * Depression
- * Muscle contractions
- * Listlessness
- * Poor performance
- * Dark urine
- * Decreased water uptake
- * Tying up
- * Diaphragmatic flutter

The horse's body cannot retain water without the presence of electrolytes. Adding electrolytes to the horses feed helps replenish the lost fluid. However, after prolonged sweating it will take several days of electrolyte supplementation to completely replenish losses. Hence supply of necessary electrolytes should continue.

Critical attention needs to be adhered to on how to sustain and replace electrolytes. Sadly, some recommend loading hard feed with salt. **Is this safe** or even necessary?

Studies consistently demonstrate sodium chloride (salt) should be available for the horse ad lib in the paddock/stables all year round in the forms of either plain iodized, cobalt-iodized or trace-mineralized salt (Himalayan Rock – often the easiest choice). Research indicates a horse will naturally uptake only 0

to 62mg/kg BW/day*. (Example: a 500kg horse would uptake naturally between 0 gr a day to a maximum of 31 gr by free choice). **Common sense dictates** adding more than 31 gr a day to hard feed (including what is already available in their feeds/supplements) would be **unnecessary and even dangerous** in consideration of Holbrook et.al., 2005 'repeated oral administration of an electrolyte solution has been associated with an exacerbation of gastric ulcers.'



*Jansson and Dahlborn (1999)

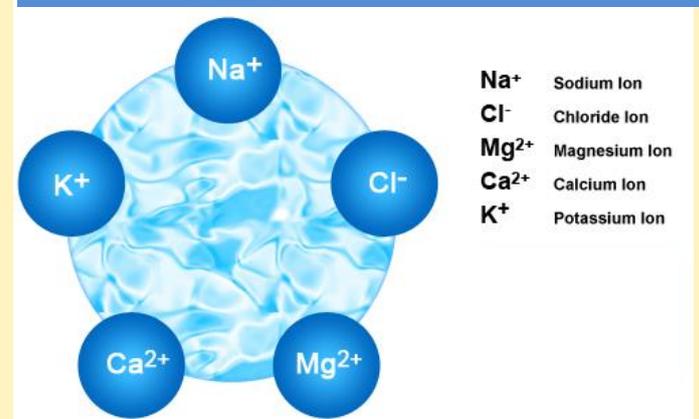
(Read more at <http://www.horseandhound.co.uk/features/understanding-essential-electrolytes-450961#kTLlf4fixqVCAAC.99>
<https://www.southernstates.com/articles/electrolytes-and-your-horse.aspx>

So how do you replace these significant electrolyte losses safely? A portion of sodium and chloride can be obtained by providing a Himalayan salt rock. Potassium can be picked up in forage, typically hay provides 10-20 grams per kg. German research revealed horses fed adequate forage maintained better water and potassium balances during exercise than horses fed a high concentrate diet (grain).

Magnesium however is not readily available in sufficient quantities to replenish a horse's needs. Magnesium must be fed in conjunction with Calcium (close to 3:1 Calcium: Magnesium) in conjunction with Boron to be adequately supplied to and utilised by the small intestine.

The other time to consider the use electrolytes is during wintry weather, especially during Autumn and Winter. When horses tend to drink less. **Horses prefer water that is 7-18°C and they will drink less if it is too hot or cold.** The water content of pasture is about 80% compared to the water content of hay which is only about 10%. The danger that can occur with wintry weather and **hay-only diets is that horses can become dehydrated and the risk of impaction colic is increased.** By feeding electrolytes daily during the cooler months the risk of impaction colic can be reduced.

Electrolyte Model



Readers of The Nude Horse Voted:

FLOWERS GOLD the best daily mineral and vitamin supplement, that includes in its normal daily feed rate: 5g sodium, 7.8g Chloride, 20g Calcium:7g Magnesium:50mg Boron & 5g Potassium