

The Heat is On~

Facts on dehydration and electrolytes

What is Dehydration and Heat Stress

Summer is upon us and things are heating up. Those of us who use our and/or haul our horses in the summer months need to be aware of the dangers and danger signs associated with heat stress and dehydration. Additionally, we need to know the tools for preventing or treating these problems should they occur.

First of all, we need to realize that horses enter into heat stress any time the temperature plus humidity is equal to or greater than 140. Thus, we realize, it doesn't take much to get your horse to the point of heat stress. Dehydration is defined simply as a deficit of body water. This deficit negatively impacts virtually every process in the body resulting in premature fatigue and increased risk of heat illness. Proper hydration is critical then, as even small deficits can negatively impact performance.

With exercise, there is an increase in heat production. Some heat storage is desirable for enhancing certain metabolic reactions, however, above that, the heat must be dissipated. The main route is through sweating, which results in losses of water and electrolytes in the sweat. The longer the state of dehydration and electrolyte deficits, the greater the chances of health problems. Many performance horses are usually somewhat dehydrated just from the trailer ride, less than normal feed and water intake due to transport to the event, and prolonged sweating from standing in the sun or in a warm trailer.

Warning Signs of Dehydration

There are several ways to detect dehydration which you should become familiar with. The above diagram outlines several areas that you should be checking. Under each parameter there are three observations. The top observation would be normal for a healthy horse, the middle observation indicates that caution is necessary, particularly as the number of parameters falling into this category increase. Finally, the lower observation indicates there is a serious problem and all exercise should be stopped. Water and electrolyte deficits will affect virtually all parameters.

Electrolytes as a Tool

Water and the necessary electrolytes are critical in moderate and intensely trained horses. Your goal would be to "maintain optimal performance through optimal health" by preventing the problems associated with electrolyte losses. Electrolytes do many things for performance horses. Pre-loading of electrolytes before competition can increase time to fatigue by up to 23%, and use of electrolytes during the cooling down process can decrease recovery times from 12-24 hours to only 45 minutes!

Physiologically, water MUST be used with electrolytes to replace the losses that occur with sweating. Electrolytes CAN in fact dehydrate the horse if not used in conjunction with water. It is also important to keep in mind that water alone can delay proper re-hydration as the water intake dilutes the plasma sodium concentrations, thereby decreasing the thirst drive before fluids can completely be replaced. In addition, urine output is increased which will be accompanied by additional loss of sodium, potassium, and chloride which are important electrolytes.

So How Can I Address Electrolyte Issues?

The requirements for all of the electrolytes can and should be met first through a properly balanced diet. The diet should be analyzed and balanced for the type and quality of the hay being fed. Once the horse goes into work, we may need to do more than just feed a properly balanced diet.

Keeping in mind again, that water intake alone can dilute the sodium

concentrations thereby decreasing the thirst drive before the body water deficit has been replaced, it is important to add a performance horse electrolyte to the water. This helps keep the sodium plasma concentrations from being diluted and the horse will continue to drink more over the course of the trip, exercise, or while cooling down.

Performance Horse Electrolytes should be formulated to replace electrolytes (salts) lost in sweat. Avoid sodium bicarbonate products, as these are for sick animals, not performance horses. Look specifically for electrolytes labeled for the performance horse. Ideally, they should be administered in the water to ensure rapid uptake and to avoid dehydration. It is important to emphasize that a fluid and electrolyte program during events will not compensate for a poor daily diet or inadequate conditioning of the animal.

Remember, prevention of health and performance problems related to fluid and electrolyte imbalances are the goal. Have a safe and prosperous summer season!

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