

## Poor Performance In Barrel Racing Horses – Non-Musculoskeletal

**A**lthough musculoskeletal injuries represent most of the poor performance in barrel racing horses, veterinarians must remember to investigate non-musculoskeletal causes of poor performance. Cardiovascular disease, upper and lower respiratory issues, dental issues, gastric ulcers, and metabolic pathologies are also primary culprits of poor performance in barrel racing horses.

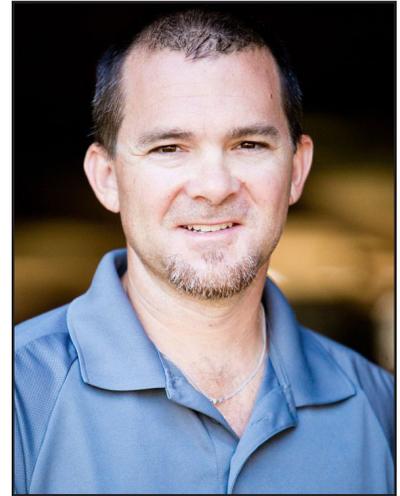
Polysaccharide storage myopathy (PSSM) is a genetic musculoskeletal condition involving many breeds. Clinical signs can be variable, but most often present as muscle stiffness, muscle trembling, poor performance or lameness. Elevated creatine kinase and elevated AST are usually present; the BUN and creatinine can also be elevated. Type-1 PSSM is diagnosed using either blood in EDTA tube or pulling approximately 50 mane hairs including the root. Type-2 PSSM requires a muscle biopsy for diagnosis. No permanent cure is currently available; however, PSSM can be managed. Low starch-high fat diets, regular exercise, vitamin E, and limiting grazing on rich green grass are essential to manage this condition. Persistent thoracolumbar soreness, with normal dorsal spinous radiographs, is not uncommon.

Equine Protozoal Myeloencephalopathy (EPM) causes neurological deficits of varying degrees that can adversely affect athletic performance. The classic presentation of EPM is an asymmetrical gait (weakness, ataxia, or spasticity involving all four limbs) with focal muscle atrophy that gradually worsens over weeks to months. Early clinical signs of stumbling and frequent interference are often confused with either a thoracic and/or hindlimb lameness. Often, reported histories from owners or trainers include: “feels weak in the hind end, having troubles keeping leads, can’t

get horse into correct leads, stumbling or falling during sharp turns, cross-firing, lethargic/decrease in energy, or loss of bloom”. Laboratory test results can be confusing as some horses may never produce a clinically detectable level of the antibody, but will still show signs of the disease and vice-versa. Treatment of horses suspected to have EPM should be done as quickly as possible after clinical signs of the disease are recognized. Multiple antiprotozoal therapy options are currently available resulting in successful recovery in 75% of affected horses

Left-sided laryngeal hemiplegia, dorsal displacement of the soft palate, and epiglottic entrapment are the most common upper airway abnormalities affecting barrel racing horses. Audible respiratory sounds and poor performance are often reported by the rider. Diagnosis of these conditions require upper airway endoscopy. Surgical correction of these abnormalities is often warranted with good results.

Lower airway disease is the most common non-musculoskeletal reason for poor performance in barrel racing horses; this is most likely attributed to constant exposure of dusty working environments. Often, bleeding is not noticed; however, riders report that the horse was coughing immediately after running or was refusing to enter the alley. If you closely watch horses that have no outward evidence of bleeding, they will constantly be moving their mouth/tongue and swallowing after exercising or running. In this scenario, the only way to confirm bleeding is to perform upper airway and tracheal endoscopy or bronchoalveolar lavage (BAL). It is not uncommon for horses to make a run, cool down and recover, hang out at the trailer or stall for 30+ minutes, and then the owner notices some degree of blood coming from the



nostril(s). In these instances where epistaxis is observed, it is recommended to initially feed the horse on the ground allowing blood to drain from upper airway. It is worth performing endoscopy in these cases to ensure blood is not originating from the upper airway. In cases of exercise induced epistaxis, a single dose of an anti-inflammatory should be administered and a short course of broad-spectrum antimicrobials initiated. The horse should be given at least 7-14 days off before returning to training. Empirically, many horses are started on diuretics to help reduce intra-pleural pressures while running. If the horse continues to cough during or after exercising/running or if epistaxis is noted again with or without diuretic therapy, a BAL is strongly recommended. A BAL will help determine if the performance limitation is caused by exercise induced pulmonary hemorrhage, lower airway inflammatory disease, chronic obstructive pulmonary disease, or mastocytosis; each of these conditions should be managed differently.

Remember, poor performance in the barrel horse can be multifactorial...meaning that your horse may have more than one system involved and may take more than one trip to the veterinarian to get your horse back to the short go.

For questions regarding poor performance in barrel racing horses, please feel free to call one of Brazos Valley Equine Hospitals locations or visit [bvch.com](http://bvch.com).