



# MANUAL FOR VETERINARIANS

# CONTROL JUDGING RIDE AND TIE COMPETITIONS

# AND

GUIDELINES FOR TREATING METABOLIC COMPLICATIONS

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# INTRODUCTION

The purpose for knowledgeable control judge guidance is to ensure the health and welfare of the horses competing in Ride and Tie. The level of metabolic and physical stress is high and the rider must learn to read his/her horse to reach optimal performance for that horse on that day. During the course of a competition, the control judge sees the horse only periodically. Therefore, the responsibility of the horse's welfare and performance clearly remains with the rider.

Common sense and good clinical judgment must prevail in each situation. Factors such as ride location, space, time and manpower, as well as trail and environmental conditions, may demand different practices. Realize that at times it is difficult to differentiate between a horse that is tired and needs to cease work versus one that is in serious metabolic trouble and needs aggressive treatment.

As control judges, it is our duty to note clinical signs of metabolic or mechanical distress and to refer those horses in need of diagnostics and treatment to appropriate personnel. As control judges, we are not employed to be providing diagnostic or treatment services. Guidelines for diagnostic and treatment principles are included in this handbook to assist those control judges who choose to provide these veterinary services in addition to their duties as control judges.

Control judges are persons that have graduated with a Degree in Veterinary Medicine from an institution of recognized standing. A control judge will provide judgment as to an equine's ability to remain in competition. Control judges are not to provide a diagnosis and will refer equines identified as requiring diagnostics to a veterinarian legally licensed to practice. A control judge who is also a veterinarian legally licensed to practice may perform concurrent duties outside the role of control judge such as providing a diagnosis and/or medical treatment.

# CONTROL JUDGING GUIDELINES

### Qualifications

#### Familiarization

Ideally, it is advisable for the control judge to be acquainted with the sport of ride and tie. Experience as a control judge for endurance rides is acceptable as procedures for the exam and assessment of the horse's ability to handle the work safely is virtually identical in the two sports. Refer to *Appendix A, "Manual for Race Directors"* for a summary of the differences in judging a ride and tie competition from an endurance ride.

For the veterinarian who has not had any experience in long distance equine sports, the contents of this Handbook will at least be a basic starter guide for control judging as well as for treatment veterinarians. Observation of the veterinary activities at a competition before taking on these responsibilities officially would be highly recommended.

#### **Professional Qualifications**

Control judging of ride and tie competitions require rapid and critical decisionmaking based on thorough acquaintance with exercise physiology and pathology. Review the basic and recent literature on that subject.

#### **Equestrian Qualification**

If you can gain experience as ride and tie competitor, it will provide a dimension of understanding that is not really obtainable in any other way. If that is not possible it is useful to have had some kind of competitive equestrian experience or at least to have been a casual rider. This may allow you to have a better understanding of a horse's and a rider's problems.

#### **Personal Qualifications**

- 1. The control judge should be tolerant, objective, firm and fair.
- 2. The personality should be pleasant, helpful, good-humored, kind and concerned.
- 3. No alcoholic beverages or recreational drugs should be consumed during the competition. This cannot be too strongly stressed: the credibility of one's judgment in the presence of liquor or drugs is rightfully suspect.

## Equipment

The amount of equipment will vary with the circumstances and whether or not you are serving as head control judge, assistant control judge, or sole control judge/treatment veterinarian for judging and treatment. For simple judging, you will require a stethoscope,

thermometer, watch with a second reading, and hoof tester.

#### Treatment

As a control judge, you may be asked to give emergency treatment to horses arriving at your checkpoint. You should have the appropriate equipment and supplies.

If you are a designated treatment veterinarian for the ride, come equipped for a variety of possible contingencies. Refer to the section in this handbook entitled Suggested Equipment and Supplies.

Depending on the venue, the number of control judges available to change roles into a treating veterinarian, and/or the lack of a designated treatment veterinarian, it is strongly recommended that ride management assist in arrangements for referrals for veterinary treatment at a local referral facility.

#### **Duties**

#### Pre-ride planning and briefing

Prior to the start of the ride, the head control judge, if requested by management, should participate with management in all phases of planning that affect the stress levels which the horses may experience. These include: layout of the trail, the selection of checkpoints (access and time required) and their staffing (at least two P&R crews per control judge in large competitions), the provision of emergency care, as well as access for removal of horses requiring ambulance service. The head control judge sets pulse criteria. Briefing the management, other control judges, treatment veterinarians, the control staff, and the riders on criteria is also the responsibility of the head control judge. Thought and judgment applied here prevent most of the problems that can arise unexpectedly from poor planning. **Control judges must have absolute and complete control over all matters affecting the welfare and safety of horses.** 

Taking on the task of being control judge implies a commitment to the horses, riders, and ride management. Your presence at the ride site is required from the start of check-in until one hour after the last horse has safely completed the course.

# VETERINARY CONTROL JUDGING AND SAFETY

# Support Staff

Dependent upon ride management's ability to pay and or make arrangements for volunteer help, the following support staff for control judging is considered optimal:

- P&R crews to gather objective data. Good personnel here can halve the control judge's effort and double efficiency
- Marshal to regulate horses, staff, pit crews, spectators and vehicular traffic at control checkpoints and road crossings
- Timers at control checkpoints
- Recorders
- Communications system between officials and between control checkpoints
- Ambulance (transport) for horse casualties
- Treatment veterinarian(s) or arrangements for prompt emergency coverage by a local equine veterinary practice

### Control

The amount of stress of the competition horse should not exceed a level where metabolic or mechanical damage could occur.

- A pre-ride examination should find and prohibit from the competition horses that are mechanically or metabolically either unsuited or unprepared.
- On-course examinations detect signs of excessive stress rates.
- A post-ride examination qualifies a horse for completion and is a chance to consult about horses with signs of stress, whether metabolic or mechanical.
   Plans should be made for the continued care of horses at the ride site and/or referring them to a veterinarian of the owner's choice.
- Ongoing inspections in camp assess the safety and suitability of arrangements and care before and after the ride.

#### Control of the course

As to the route assure that:

- The test is reasonable without undue hazards of mechanical injury or metabolic exhaustion;
- There are sufficiently accessible checkpoints;
- There are a sufficient number of control checkpoints.

• Altitude must be considered.

#### **Control of ride**

Work with ride management to change the time of the start or even cancel the ride if weather conditions, terrain, or other conditions such as insufficient control or treatment staff create an unacceptable hazard to the horses' health.

### Treatment

When possible, the control judge should NOT be the primary treatment veterinarian. Even small competitions should be encouraged to have a treatment veterinarian available. In large competitions, the head control judge should designate which of the control judges will switch to treatment in the event of problems.

Treatment is almost universally a fee-for-service arrangement between the rider and the treating veterinarian. If and when a control judge transitions into the role of a veterinarian providing treatment services, the doctor/client/patient relationship becomes operative. Just as in private practice, medical and treatment records should be kept and, as appropriate, a release or informed consent form should be available. If indicated, the client should be required to sign off that he/she has declined the offered treatment or suggested referral to an offsite veterinary clinic or hospital.

# AGREEMENTS

Confirm the time and place of the ride, the duration of service, the duties you are to undertake, the assistance that will be provided, and the compensation (expenses reimbursed and amenities included). The time to clarify expectations is not during the ride. Misunderstandings can endanger the horses and create liability issues.

# Head Control Judge

Ride management will be securing the services of and be responsible for compensating additional control judges and treatment veterinarians. The control judge and any treatment staff should be mutually acceptable to you and to management so it is a good idea to encourage ride management to consult with you in making these arrangements.

Establish the location and availability of an emergency veterinary referral hospital, and make contact with the veterinarians at that clinic so they are in readiness to admit a sick or injured horse. Get detailed written directions to the clinic as well as appropriate contact phone numbers. Management should have these readily available to members of the control judging and treatment staff to distribute to the owner/rider and driver of the sick horse.

The head control judge sets pulse criteria and is responsible for briefing the competitors about criteria prior to the race.

# Associate Control Judge

As an assistant control judge, be sure you understand the level and limits of your responsibility for decision making. If the decision-making process cannot be arranged to your satisfaction, decline to serve.

## **Treatment Veterinarian**

- Establish how injured or sick horses will be reached, transported, and kept for ongoing treatment.
- Establish an emergency protocol for the riders prior to arrival of help (e.g., stay in one place, go to nearest road, etc.). This should be discussed at the pre-race briefing.
- Establish who supplies, stores, and distributes the large bulk of materials such as fluids.
- The treatment veterinarian should determine the financial arrangements with ride management. Riders should be informed of financial responsibility for treatment of their horse.
- Veterinary students and trained veterinary technicians under direct supervision of a licensed veterinarian can help in ongoing care. **The responsibility for all**

medical decisions and choice of treatment options remains in the hands of the treatment veterinarian.

• Establish a plan for referring a sick or injured horse to a referral veterinary hospital.

# PREPARATION

**Examine the course**, at least on topographic maps. When possible, examine representative segments of the trail from the back of a horse or an ATV.

**Draw up a Control Judge Flow Chart for all control judges.** Make sure that scheduling allows for the fastest possible arrival at a control checkpoint and the last permissible rider departure time. Have capable vehicles and knowledgeable drivers to transport control judges. A control judge should remain at every control check until every horse has departed from the control check.

#### Prepare for the rider briefing, with notes to:

- Review the physical signs of stress that establish your rational basis for control procedures and criteria;
- Describe control procedures and criteria and detail the flow patterns through each checkpoint.
- Describe the special concerns that you have about the terrain and/or weather in various sections of the trail which you feel should affect the riders' strategy and pacing;
- Describe the post-ride examinations for completion and Best Condition awards.

#### On-site before checking in horses:

- Establish the competence of lay help to carry out assigned functions of taking temperature, pulse and respiration.
- Brief the control judging, veterinary treatment and management staff on preride, control, and post-ride criteria procedures.
- Distribute schedules and assignments to the control judge and treatment veterinary staff.
- Lay out the pre-ride inspection site for efficient assessment of horses.

# PRE-RIDE EXAMINATION

It is very helpful if management can provide marshaling assistance to keep this orderly and safe.

# **Principles**

Assess the readiness of every entry to withstand the rigors of this competition. Rigorous screening at this point prevents problems during the race. Concentrate on the essentials. You are not examining the horse for purchase; you are looking for evidence that the entry may not complete the ride in the time allowed due to metabolic fatigue, mechanical failure, or exterior injury. All horses with any degree of lameness should be reviewed by at least two control judges before eliminating the horse from starting. Courtesy may suggest an explanation of reasons for elimination and review with the disappointed rider when, and if, time permits.

# Procedure

Be systematic. All parameters described on the rider card should be assessed and noted on the card at the pre-ride judging examination, at every subsequent control checkpoint and at the finish line judging examination even if the horse has been eliminated.

Rectal temperature may be taken by members of the lay staff before each horse is presented for examination.

Evaluate the heart rate and rhythm at rest. Then the horse can be jogged for soundness. If he jogs unsound, ask the rider to return at the end of all the examinations for further evaluation and a decision. Firm, consistent footing is desirable for jogging. In re-examining doubtful entries, detailed palpation, flexion tests, hoof testers, and other diagnostic procedures may help to segregate the innocently sore from the dangerously lame. Examine the heart and lung fields with a stethoscope just as the horse returns from jogging. The rapid decline of the pulse from the slightly elevated rates achieved at the jog will enable you to form an opinion about the quality of the organ as a pump and the rapidity with which it returns to resting rates. It will also enable you to pick up significant irregularities.

Complete the metabolic examination according to the order on the rider card. These largely subjective parameters are best rated A-B-C-D rather than numerically. While not every control judge will draw the distinctions between grades at the same point, every other examiner will know whether the sign was rated (A) superior, (B) acceptable, (C) cause for concern, or (D) unacceptable and cause for elimination. Numerical or descriptive notations are less informative.

Start at the nose and mouth, assessing mucous membranes and capillary refill. Press

over the jugular vein for venous refill time. Pinch up a tent of skin on the point of the shoulder; this is a more consistent location than using the side of the neck to assess this indication of dehydration. Any delay is noteworthy; a second or longer is definitely significant. As you move toward the rear, ballot the triceps, glutei and ham muscles for tone and reaction. Palpate the back and loins. Stop and listen to all quadrants for gut sounds which need not be loud or numerous to satisfy but should be present. Step to the rear and lift the tail, evaluating tail muscle and anal sphincter tone. Make a quick tour of the horse for symmetry, for mechanical defects, and interference lesions to estimate obvious liabilities of locomotion.

The trot out should be straight out and back for a sufficient distance and the horse may be circled in each direction to observe that the horse shows no consistent gait aberrations under normal circumstances. Do not use severe maneuvers or flexion tests on this exam. Save these diagnostic procedures for re-evaluation. If the horse jogs sound, the legs can be examined in a cursory fashion. Don't get caught up in minute palpation of the legs. Inspect all limbs for signs of previous significant disease such as a thick joint, tendon or ligament, recent wound or severe interference. If necessary, quickly feel suspicious areas, but avoid deep palpation or strenuous manipulation of the legs. Pick up each foot and check the adequacy and type of shoeing. Similarly review saddle, girth, and bit areas for suspect or overtly painful lesions.

Do not omit a general impression of the horse; assign it an A-B-C-D value on the rider card.

### Disqualification

The standard to advance is similar to an endurance ride, "fit to continue." This involves all aspects of the horse, i.e., metabolic and/or lameness. It is not always possible to make a definite diagnosis as to lameness, however, it is incumbent upon the control judge to make a subjective evaluation of the horse's gait as to "fit to continue." The AAEP guidelines for lameness as defined below act as an aid in evaluating and determining if a horse is "fit to continue."

Before the competition, horses with Grade III or IV lameness are excused irrespective of cause. Time pressures require judgments to be rapid and critical. However, many times the rider can be held until adequate time is available to better assess a questionable lameness. Horses with Grade II lameness should have the source of their problem identified if possible and a judgment made as to prognosis with work. A competitor with a horse with Grade I lameness should be advised of the finding and an effort made to find the potential cause. If a brief examination fails to find any, such horses can usually proceed under careful surveillance. Many will complete the competition in satisfactory order; some will become lame enough to disqualify.

#### Lameness

#### Definition

Lameness is a deviation from the normal gait or posture due to pain or mechanical dysfunction.

#### Classification

Approved by The American Association of Equine Practitioners/December 1981

- **Grade I.** Difficult to observe. Not consistently apparent regardless of circumstances (i.e., weight carrying, circling, inclines, hard surface, etc.).
- **Grade II.** Difficult to observe at a walk or trotting a straight line; consistently apparent under certain circumstances (i.e., weight carrying, circling, inclines, hard surface, etc.).
- **Grade III.** Consistently observable at a trot under all circumstances.
- **Grade IV.** Obvious lameness at a walk: marked nodding, hitching, or shortened stride.
- **Grade V**. Minimal weight-bearing in motion and/or at rest; inability to move.

Seek a second control judge opinion when possible if considering disqualification of a horse at any time during a competition.

In eliminating horses for condition before the ride, subjective judgment should be applied with caution. Obviously sick horses, coughing horses with or without nasal discharge, major heart murmurs or irregularities are to be held out from competition. Thin, fat, over- or under-trained horses are more difficult to eliminate without just cause; always feel free to express your concern to riders of horses with liabilities, and to order and conduct extra-close surveillance during the ride.

# **RIDER BRIEFING**

This is the time to establish the relationship between the control staff and the competitors and should be undertaken seriously and systematically. Introduce all of the staff assisting in control, review the procedures and, most importantly, the recovery criteria for control. Remind the competitors of the following: The control judge team is in partnership with the riders. Vet cards are not to be confused with medical records. The condition of your horse is dynamic and in an endurance ride setting can very quickly change, regardless of whether at the last checkpoint your horse received good scores. Remind competitors to not let any desire to win affect their judgment regarding the well-being of their horse. Finally, remind competitors that they, not the control judge, are ultimately responsible for the well-being of their horse.

Discuss the traffic patterns at the various checkpoints and any special areas or features of the trail or conditions of competition that particularly concern you. Discuss the logistics of hauling eliminated horses out of checkpoints back to base camp.

# **CONTROL JUDGING DURING COMPETITION**

# **Principles**

**Remember there are no conditional releases.** Remind yourself that there is no guarantee that the rider will follow your advice

- Examine horses regularly and often during the competition, every 10-12 miles if possible, with the greater frequencies recommended in difficult terrain or hot, humid weather).
- Recognize fatigue factors promptly and advise the rider how to modify the use and care of the horse to achieve completion.
- Use progressive pulse recovery as an indicator of fitness. P&R crews should be available to facilitate taking heart rates. When a horse arrives at a control checkpoint during a ride, it has 30 minutes to meet pulse criteria.
- Evaluate respiration recovery rates; consider the minute volumes of air being moved more than the numerical rate, taking into account the ambient temperature and humidity and the horse's body temperature. Rectal temperature should be less than 103.5°F and should drop within 10 to 20 minutes of stopping exercise.
- A control judge should perform a complete hands-on exam of every horse. Carefully examine and auscultate horses that present with poor recovery numbers or signs of fatigue. Use the Cardiac Recovery Index (see below) in conjunction with all other clinical parameters to determine "fitness to continue."

# Criteria

#### Pulse

Pulse recovery with rest has become the main objective measure of "fitness to continue." When examining a horse with questionable parameters, refer to the intime to see how much time has elapsed since arrival at the control checkpoint. The less stressed horse achieves a pulse of 68 bpm or below within five minutes of rest. A recovery rate of 68 bpm or less within 10 minutes should be expected. A recovery rate of 56-64 bpm within 20 minutes of arrival is a reasonable expectation. The palpable pulse and auscultable heartbeat should be regular and full, not wandering, labile, thin or "slapping."

#### The Cardiac Recovery Index

The ability of the horse's circulatory system to accommodate the level of exertion experienced at the event is monitored by use of the Cardiac Recovery Index (CRI). The horse is not presented until it has met recovery criteria established for that competition, usually of 68 bpm or less. The horse is then presented to the control

judge, and a resting heart rate is taken. Then the horse is trotted 125 feet out and 125 feet back. (The gait can be observed during the jog out for soundness and impulsion.)

At exactly one minute from the time the horse **started** the 250 foot trot out, the heart rate is taken again. Most horses complete the trot out within 25-30 seconds, allowing the horse to stand quietly for the remainder of the minute. (For a horse that does not object to being handled, the control judge can initiate evaluation of the metabolic parameters during the remainder of the minute.) A horse that is demonstrating adequate metabolic compensation should recover to the same resting heart rate taken before the 250 foot trot out, or preferably to a heart rate of four bpm less than the starting rate.

#### Respiration

Respiratory recovery varies with the weather conditions. It is the volume of air being moved per minute that is the critical factor. Under normal cooling conditions, the respiratory rate will subside parallel to and below the pulse rate. Since endurance effort produces high body heat and since horses vary in their respiratory response to poor cooling conditions, panting in hot, humid weather can be entirely consistent with optimal performance. If pulse and other signs of recovery are prompt and progressive, panters with a true core temperature below 103.5°F are merely devoting respiratory effort to further cooling within the physiologic range. Any horse with a rectal temperature above 103.5°F should be closely scrutinized for other fatigue signs and made to reach and maintain cooler temperature to be "fit to continue" on the trail. Some panters can be recognized before the ride during the pre-ride inspection in hot, humid weather by their tendency to rapid shallow breathing with rates in the 40s or 50s when they are entirely at rest.

#### **Body Temperature**

At least 70% of the energy of muscle metabolism converts to heat within the working muscles. Horses working near their maximum aerobic rates (and faster) develop elevated body temperatures. Rectal temperatures of 101°-103°F are common and tolerable. Rectal temperatures above 103°F for longer periods can be dangerous. Horses with temperatures above 103.5°F should be subjected to supplementary cooling with water, both at the checkpoints and on the trail provided the horse is deemed "fit to continue." A horse with a rectal temperature remaining above 103°F for 30 minutes following cessation of exercise and despite external cooling may not be adequately compensating for the heat stress, and so may be deemed not fit to continue. Take the rectal temperatures of all panters and horses with poor pulse recoveries. Horses with rectal temperatures greater than 103°F should be subjected to external cooling and rechecked within the 30 minute time frame. A very slow bowel may accompany a high rectal temperature and

must be considered when deciding if a horse is "fit to continue."

#### Dehydration

The persistency of a skin fold **pinched at the point of the shoulder** may indicate body water lost in excess of 3% of the horse's body weight. The skin pinch on the side of the neck is less reliable as a hydration marker since it is easily influenced by elasticity of the skin and fat content. Increased skin tenting, scant sweat, dry, injected mucous membranes, and sinking of the eyeball with consequent drooping of the upper lid are all signs of dehydration. When several of these abnormal signs are present, dehydration may be complicated or may be "just the tip of the iceberg." This is the time to start looking carefully for additional elements of fatigue or metabolic failure.

#### **Capillary Refill and Mucous Membranes**

Lightly blanch a spot on the gum just above an upper tooth with pressure from a thumb or finger. Undue finger pressure results in false information. Time the return of full color to the gum at that spot. Normally this takes one to two seconds. Refill time prolonged past two seconds denotes low blood volume and/or low blood pressure. Poor capillary refill often corroborates findings of dehydration, as do dry, tacky mucous membranes. Muddy or injected mucous membranes or purplish gum margination are reliable indicators of metabolic disease.

#### **Jugular Refill**

Jugular refill is delayed with falling blood volume and capillary perfusion. Block the vein and estimate how quickly it fills up craniad. Two or three seconds is usual and adequate. Note that horses with slow resting heart rates may give the impression of a delayed jugular refill time.

#### **Gut Motility**

The diversion of blood from visceral to muscle circulation can cause diminished gut sounds or even a complete ileus. Reduced gut sounds in an apparently healthy horse are of less concern than a horse with absent gut sounds accompanied by other metabolic abnormalities. Both of these horses should be monitored closely.

Hyper-motile gut sounds may be a prelude to an ileus.

#### **Expression and Behavior**

Sleepy-looking eyes and droopy ears may be related to fatigue. Loss of attentiveness is significant. Loss of appetite is alarming. Loss of thirst in the dehydrated horse is seen with metabolic fatigue and electrolyte imbalances. Since experienced campaigners may stand quietly at rest and possibly alarm an inexperienced observer, it is important to determine which horses have passed a point of safe and reasonable fatigue.

#### Impulsion

The loss of elasticity, power and length of stride are proportional to muscle fatigue and often moderately deteriorate over the course. Electrolyte imbalances, dehydration, or any other physiological disease process such as exertional myopathy, overheating, or glycogen depletion may adversely affect impulsion.

#### Gaits

Lameness on the trail or at a control checkpoint should be evaluated by the same AAEP grading outlined with the pre-ride criteria. Grades I and II can usually "go on" with caution. As in the pre-ride exam, consider the prognosis of the lameness with work. If the athletic future of the horse is threatened then consider disqualifying the horse. Grade III lameness or greater for any reason should be disqualified at any point at which it is revealed, including on trail and at the finish line control check. The degree of lameness should be determined in a straight out and back trot out before any diagnostics are performed (i.e., flexions, palpation, circling, etc.). Lameness eliminations should be based on a gait where the lameness can be localized to a particular leg(s) and there is a high degree of confidence that it can be blocked out or localized. By applying this "standard," we can find some commonality as control judges in our gait evaluations and avoid nebulous lameness eliminations.

#### Interference

Bleeding or tender interference injuries should be carefully assessed for ability to continue. Horses with severe interference wounds are not considered "fit to continue." Re-shoeing the horse before or during the ride to relieve shoeing errors or interference is at the rider's discretion.

#### Equipment rubs and/or discomfort

Severe saddle, girth, or bit injuries should be disqualified if a change in equipment will not relieve them. Improperly fitting saddles can contribute to severe discomfort and lameness and can be a cause for elimination.

#### A caution mark

Sometimes a horse will present with signs that give cause for concern but not disqualification. The signs of concern are noted on the card and signed by the control judge concerned. The rider is given any special instructions on pace or care to relieve or arrest the problem. Note that there are no conditional releases; a horse is only to be let out of the control checkpoint if he is demonstrating metabolic competence and progressive recovery based on a full exam. If there is any doubt about a horse's metabolic condition, the horse should be eliminated. **The objective of control judging is to pull the horse showing undue fatigue or lameness rather than waiting until it is overtly sick and in need of treatment.** 

A horse exhibiting **synchronous diaphragmatic flutter (SDF or "thumps")** is NOT considered "fit to continue." This is a warning sign of serious fluid and electrolyte derangements. The horse should be disqualified as with any fatigue condition related to failure to recover.

### **Completion Examination**

The same criteria and procedures that are applied throughout the ride should be applied at the finish line. The post-ride completion exam may be carried out as soon as the horse has finished and reached pulse recovery.

A horse should be certified for completion if it:

- 1. Demonstrates remaining reserves, can safely be ridden further, is capable of "going on," i.e., is "fit to continue" even if at a reduced speed;
- 2. Has stable vital signs, and is demonstrating recovery. As with criteria used throughout the ride, the completion criteria is to be set at the discretion of the head control judge.
- 3. Has not had nor urgently requires medication or treatment of any kind.
- 4. Is not lame consistently at the trot on a straight line (Grade III), nor at the walk (Grade IV).

Horses significantly fatigued or needing veterinary care should be listed and kept under control judge observation until they have recovered or are referred to the treatment veterinarian. Any horse that has been treated or medicated prior to the final control check is not eligible for completion.

## **Post-Ride Courtesy and Safety Check**

Between the arrival of the last competitor and the distribution of awards, there is time to "cruise the camp" to make sure all horses are recovering well, that recommended treatments and care are being administered, and that rider concerns and questions have been answered. Riders appreciate the ongoing concern and assistance offered by the control judges and treatment veterinarians. Problems can develop after the completion/Best Condition examinations. Horses eliminated on the course should be seen again before leaving. Advise riders of eliminated horses that it is their option and responsibility to have the horse rechecked before leaving the ride site and that they are accepting any risks that may be associated with the failure to have a horse rechecked before control judges are discharged after a ride is concluded. Documents of all treatments and recommendations for further care should accompany the horse on their departure from the ride.

# **BEST CONDITION EXAMINATION**

This examination is to select the horse considered the most fit, freshest, and in the soundest condition at the end of the ride. **If no animal is in acceptable condition, the award may be withheld.** The evaluating procedures for Best Condition may be more demanding than the routine control procedures but should be sufficient to discriminate between contenders. The examination is usually performed one hour after the finish but may be at such other time as the management may specify.

# **Guidelines for Control Judges: Judging Best Condition (B.C.)**

- Horse Judging Definition: It is recognized that there are many ways of defining Best Condition (e.g., against the ideal, against the group examined, against itself, condition throughout the ride, or condition at the time of examination). For the horse judging portion of the score, the definition accepted, the horse, at the time of the Best Condition examination, that is in the best condition and deemed most fit to continue.
- 2. The actual award is modified to include finishing time in addition to the horse judging aspect.
- 3. It is very important to use the full range of points allowed in each category. If only the upper end of the scale is used, a quite fatigued or lame horse ridden by an exceptionally fast team will be the highest scoring horse after time factors are considered. This is not to minimize the time factor, but to prevent the award from going to an unfit or lame horse!
- 4. Standard: All horses judged for B.C. will be judged against a standard of a wellconditioned, fit, sound and metabolically normal endurance horse. CAUTION: With regard to gait and movement one must consider what is normal for the breed, type, and disposition (animation level).
- 5. Any horse with a severe abnormality in any category should not be considered for best condition.
- 6. If all horses score "low" using these standards, recognize that it is possible that no horse meets acceptable standards for awarding a B.C. award. If none of the horses evaluated are worthy (in the opinion of the judging committee) they may elect not to award a Best Condition award.
- 7. Consider what is only "showmanship" that serves to "hype" the horse and detracts from evaluating the animal's true state of ability to continue. Note particularly if the horse's head is held in such a way as to prevent easy observation of movement.
- 8. Horses should be evaluated for gait abnormalities, impulsion, etc., prior to any palpation. Avoid excessive pressure when palpating during this exam. Remember

that these horses may to be tired and sensitive following a race. Undue pressure is unkind.

#### 9. BE CONSISTENT!

10. Refer to Appendix A for a copy of the Best Condition Judging form that will provide a guideline for scoring the veterinary exam and the time factor.

# SUGGESTED EQUIPMENT AND MEDICATIONS

# Suggested List of Equipment for the Control Judge

- Guidelines for Judging Ride and Tie Competitions
- Stethoscope
- Watch with second hand
- Thermometer

## Suggested List of Equipment for the Treatment Veterinarian

- Twitch and/or lip chain
- Nasogastric tube
- Stomach pump
- Bucket
- IV catheters: 12 gauge 5-1/2" and/or 10 gauge for large volume administration e.g., Mila, Medicut
- Pressure pump or hand bulb for accelerating the administration of intravenous fluids
- IV tubes: Large-bore (at least 12 gauge) for high volume fluid flow
- Flashlight and extra batteries
- Hoof knife and hoof tester
- Equipment to remove shoes
- Scrub preparations
- Sterile surgical pack and suture material or stapler
- Bandaging materials
- Needles and syringes
- Various types of vacutainer tubes
- Formalin jars
- Postmortem knife/culturettes
- Rectal sleeves and lube
- Towels
- Lily pads or blue foam or Equithane for sole support

- Kimsey brace and/or splinting material (PCV pipe)
- Portable IV pole: Use two pieces of aluminum conduit screwed together to 8-10 feet in length. (When unscrewed, the two pieces store out of the way under the back seat of your truck.) Use set screws to hold the two conduit pieces together, an eye bolt at the top section, and a clip to hold the fluid bag.
- ISTAT (with EC8 and creatine cartridges) or Abaxis Chemistry Analyzer would be of great benefit in treating horses. An arrangement with a local hospital may also serve as a source for laboratory testing if none is available on-site.

### Suggested List of Medications for the Treatment Veterinarian

- IV fluids: Multiple liter bags (3 to 5 liter bags) of physiological saline and a polyionic, non-alkalizing fluid (i.e., Ringer's). More fluids may be required if a larger number of horses are expected or with elevated heat and humidity. A larger volume of fluids may also be needed at the higher stress of championship rides. A rule of thumb is 200 to 300 liters for 60 horses. Sodium bicarbonate solutions are almost uniformly contraindicated for the metabolic problems of endurance horses.
- Oral electrolytes without bicarbonate
- CMPK or Decaphos to serve as a source for Ca, K, Mg, etc.; calcium gluconate (dairy milk fever preparation)
- Potassium chloride, 20-40 mEq/ml, may be used at the rate of 20-40 mEq/liter in horses with significant potassium deficiencies
- Dantrolene as IV solution or capsules. As capsules, the horse may be dosed at the rate of 3-5 grams/1000 lbs.
- 50% Dextrose solutions for IV and/or oral use
- DMSO liquid for IV and/or oral use
- Magnalax powder for oral supplementation as an antacid or salt laxative
- NSAIDs (Phenylbutazone, flunixin meglumine, etc.)
- Sedatives and Tranquilizers—xylazine, detomidine, butorphanol, acepromazine
- Diazapam (Valium) 25-50 mg IV for the treatment of seizures
- Ophthalmic medications
- Antibiotics. Suggested choices: ceftiofur, trimethoprim/sulfadiazine (powder, paste or tablets), gentamicin, K penicillin or Na penicillin
- Oxytocin (for treatment of choke)
- Buscopan

- Wound supplies: antibiotic ointment, bandaging materials, local anesthetic
- Hypertonic saline solution
- Euthanasia solution

# TREATMENT PRINCIPLES FOR METABOLIC CONDITIONS IN DISTANCE HORSES

Protracted endurance exercise places a huge physiologic demand on ride and tie horses, and occasions arise when treatment is necessary. With trial and error, each practitioner devises a treatment protocol that gives the best and most efficient results. Each horse presents a unique story and should be managed for its unique and specific problems. The philosophy of treatment at a competition should be to stabilize the horse to a point that the horse starts to eat and drink and take care of itself, while signs of fatigue and metabolic complications continue to improve.

It is important for all control judges and treating veterinarians participating in ride and tie competitors to remember that there are situations that dictate the necessity of seeking a better environment for medical care than the base camp or control checkpoint. Every effort should be taken in advance to make arrangements with a well-equipped and well-staffed equine hospital to receive referrals from the ride.

Once the horse has been stabilized at the competition site, strongly consider a referral to such a facility in order to enhance the welfare of the horse. Confirm with ride management that they have prepared contact information including directions in advance. Management should have copies to give to owners. Send written information about what medications and treatment you have given. Your services are probably more important to the competition as a control judge or emergency treatment veterinarian than providing long-term, extended medical care that will likely be better provided in a hospital setting.

The following is a brief review of common metabolic abnormalities, a review of treatment principles, and a discussion of a variety of drugs (some old, some new) that are available to enable clinical recovery of fatigued and exhausted horses in distance sports. It is recommended that you familiarize yourself with treatment options and possibilities of metabolic complications of distance horses before you work a ride. The following material is meant as a reference guide of treatment protocols that can help to achieve successful resolution of metabolic problems and to hopefully reduce the possibility of secondary complications. The following treatment principles are not meant to supersede or replace your clinical judgment and the practical restrictions and limitations you may experience at the competition ride environment. They are also not standards of care and the often-limited ability to provide this care at a remote ride site versus a hospital setting should be realized.

## **Recognition of the Exhausted Horse**

Any of the following symptoms may be present in a horse experiencing metabolic stress or failure:

• Delayed HR recoveries—pulse persistently above 64 bpm or labile

- Poor Cardiac Recovery Index (CRI)
- Abnormal gut sounds, either hypermotility or hypomotility
- Dry, scant or mucous-coated feces, indicating intestinal stagnation
- Lack of appetite
- Disoriented attitude or no interest in surroundings
- Depressed posture
- Lack of thirst—in the presence of clear signs of dehydration
- Anxious facial expression: glazed or sunken appearance of eyes, wrinkled lips
- Oblivious to external stimuli such as insect bites, application of rider's aids, or physical threats
- Loss of impulsion and elasticity of gait; ataxic or weak
- Skin pinch test remains tented but note there is often poor correlation of skin pinch test with level of dehydration
- Mucous membranes showing margination around gum line, muddy color, or dryness
- Poor jugular refill
- Flaccid anal sphincter or relaxed penis
- Thumps (synchronous diaphragmatic flutter or SDF) is often associated with intestinal atony and is related to decreased ionized calcium
- Hyperthermia: Rectal temperature above 103°F within 20 minutes of stopping exercise
- Decreased rectal temperature due to dilated anal sphincter
- Myoglobinuria—may or may not be accompanied with stiff or cramping muscles
- Exertional myopathy/muscle fasciculations/exertional rhabdomyolysis
- Signs of impending laminitis: increased digital pulses, camped-out stance, shifting weight, pointing foot, or overt Obel lameness
- Colic: anxious appearance, abnormal stance or lying down, gas distention, impactions, displacements, or any evidence of abdominal pain.

#### Assessment of Hydration

Skin turgor, known as the skin pinch test, is informative after 3% to 5% percent dehydration, but varies with the amount of subcutaneous fat present. Mucous membrane

refill and moisture can be helpful, but are somewhat subjective. Urine concentration observed in the stops will help to determine hydration status but this information is not consistently available to the control judges. Packed cell volume (PCV) and total protein (TP) are also reliable estimators of hydration status. In the field, a Mobile Spin centrifuge can be used to spin down blood for use with a refractometer and hematocrit card for the determination of circulating fluid volume. Note that the PCV may not rise as much as the TP in a very dehydrated horse. To gain an estimation of electrolytes, glucose, and some enzymes in the field, an I-Stat device (SDI Devices, Inc.) or Vet Scan blood chemistry machine may be used. These machines, though considered expensive in certain contexts, inform us of the health parameters of the patients and the effects of our treatment. They may be extremely valuable if a pre-existing disease is present.

### **Intravenous Fluid Therapy**

The treatment of choice for metabolic disease in the ride and tie horse is the use of intravenous fluid therapy! Since the competing horse can easily lose 10 to 15 liters per hour of fluid volume, horses in metabolic stress should receive at least 15-30 liters. Rapid fluid administration will not result in over-hydration provided kidney function is normal. Renal compromise that often accompanies myopathies can benefit from high volume flow. Urination should occur after the intravenous administration of 15-18 liters in hypovolemic conditions related to exercise, and it is a useful index of appropriate response to fluid therapy. If it has not, more measures may need to be taken to ensure adequate kidney function. These will be discussed below.

#### **Choice of Catheters and Fluid Administration Sets**

The best means of giving large volumes rapidly is with the **use of large-bore intravenous catheters, 12 gauge or 10 gauge in size**. (Through a 12 gauge, 5-1/2 inch catheter, 20 liters of fluid will flow over a period of about one hour.) Largebore catheters and any catheter placed under conditions where asepsis is not achieved should not be left in long-term (>24 hours). The catheter should be sewn into or glued to the skin and a neck bandage applied so the catheter moves as little as possible. A large-bore IV extension set can be attached to minimize handling and movement at the end of the catheter.

Remember that the rate of flow through a catheter depends on the bore size of the extension sets and IV lines. Any in-line tube smaller than 12 gauge will restrict flow rate. (A large-bore catheter set that can be plugged into IV bags of pre-mixed fluids is made by Jorgensen Labs.)

Single liter bags can be used with an infusion pump to hasten flow, but this method is extremely time-consuming and not as cost effective as bulk fluids. They will, however, facilitate dispensing of specific medications into an IV line. When possible, warm fluids prior to administration of large volumes. This can be done with a microwave oven (from a nearby camper or convenience store) or bags of

fluid can be immersed in the hot water baths to warm the fluids. The higher the fluids are hung, the faster the flow rate. In the field, some ingenuity may be necessary to find a fluid perch: Trees or tree branches work well, as does a horse trailer. A portable IV pole is described under the Suggested List of Equipment.

#### **Choices of Fluids**

For the dehydrated horse/exhausted horse complex, the objective is to expand the extracellular fluid volume, preferably using isotonic fluids. Many commercial preparations make this objective quite easy. The fluid of choice is Ringer's solution which contains sodium, potassium, calcium, and chloride and is specifically indicated for correction of fluid and electrolyte deficits in the presence of metabolic alkalosis.

One of the more common fluids stocked in the clinic pharmacy is Lactated Ringer's solution. This fluid is really indicated for correction of mild acidosis due to its alkalinizing properties derived from the lactate buffer. In distance horses that are alkalotic due to losses of sodium, chloride, and potassium through the sweat, LRS may not be the best choice in all situations. However, if this is the only fluid on hand, a dehydrated horse would benefit from fluid of any type rather than none at all. The need for immediate volume replacement supersedes the acid-base condition of the horse, particularly when electrolyte imbalances can be corrected with potassium supplementation to return blood pH to normal.

Multisol-R or Normosol-R are often-used isotonic replacement fluid despite containing alkalinizing precursors of acetate and gluconate. To date, no adverse effects have been reported from administration of large volumes of these solutions to horses with metabolic alkalosis, and particularly if the potassium deficits are simultaneously replaced.

Normal saline (0.9%) is an excellent choice of isotonic fluid, however it will need to be supplemented with potassium and calcium to replenish those ions lost in sweat. If you run low on fluids, you can dilute one bottle of hypertonic saline (7% sodium chloride) with seven liters of distilled water to make a physiologic 0.9% saline solution.

### **Intravenous Fluid Therapy Supplementation**

One of the components of exhaustion in a ride and tie horse is depletion of energy. Because of this feature, it is critical to supplement at least part of the fluids with dextrose. By giving 50-100 grams/hour, blood glucose will be maintained at 150-250 mg/dl. Dextrose can be added at the rate of 100 cc/liter of 50% dextrose to make a 5% dextrose solution.

Potassium is lost in moderate quantities in the sweat of distance horses, and although supplied amply in hay and grass, the exhausted horse must receive supplementation to

replenish acute losses, to maintain bowel motility, and to correct metabolic alkalosis. Signs of potassium depletion include muscle fatigue, elevated or irregular heart rate, and intestinal ileus. It is safe to give 20-40 mEq/liter of potassium chloride, with as much as 250 mEq/hour running through the fluids. Note when adding potassium to fluids that Multisol-R already contains 5 mEq/liter.

Calcium is another ion lost in large supply in the sweat. Signs of hypocalcemia include tachycardia, tachypnea, muscle fasciculations especially of the face (trismus) and triceps, dilated nostrils, and synchronous diaphragmatic flutter (thumps). Useful calcium supplements include CMPK or Cal-Dextro which may be given orally or intravenously. You may want to infuse this solution slowly through a separate IV catheter and monitor the horse's heart rate and rhythm as calcium overload will cause the heart rate to decrease.

Another supplement that may be added to the IV fluids is a 5%-10% solution of DMSO liquid. A solution of greater than 10% may cause hemolysis. Split one pint of DMSO liquid between 12 liters of fluids and only give this concurrent with generous volume replacement. As a potent diuretic, DMSO dilates renal vascular beds. It also neutralizes some of the toxic effects of myoglobin so is useful to treat rhabdomyolysis and to prevent acute renal failure. DMSO acts as an anti-inflammatory drug as it is a free radical scavenger and quite effective against the effects of endotoxins. The easiest and safest method of DMSO administration is via a nasogastric tube provided no ileus is present. In this case DMSO is mixed in a 1:5 ratio (up to one pint of DMSO) to avoid gastric irritation.

## **Oral Fluid Supplementation**

Oral fluids provide an excellent method of administering fluids provided the horse is not experiencing an ileus or gastric reflux. It is best to use isotonic fluids because hypertonic fluids irritate the GI tract and "pull" fluid out of the ECF into the bowel. By administering frequent amounts of small volumes, you can give 6-8 liters of fluids through a nasogastric tube every 30 minutes as needed. Gravity may be used, or a stomach pump may be used with care. A stomach pump is useful to try to establish a siphon to check for reflux. To minimize the horse's discomfort, remove the tube between treatments. The persistent presence of the stomach tube may elicit a gag reflux or dilate the stomach with air, and it is unnecessary provided there is no gastric reflux. In addition, removal of the stomach tube allows us to observe if the horse will begin to eat and drink.

Commercially prepared electrolytes and home preparations are available for administration through a nasogastric tube. CMPK (1 bottle of 500ml) + 50% dextrose (1 bottle of 500ml) + 1 tablespoon table salt + 1 tablespoon lite salt in 4-8 liters of water has

been recommended as a stall-side preparation that is an absorbable source of electrolytes and sugar.

Magnalax, a hypertonic salt laxative, will aid in circumstances of poor intestinal motility, or

gas production by increasing the fluid in bowel contents and acting as an antacid. Use concurrently with IV fluid therapy.

Many times intestinal atony is related to electrolyte and fluid depletion in the ride and tie horse. However, once the cascade of an ileus begins, more may need to be done to stimulate intestinal motility provided there is a not a serious impaction nor an intestinal displacement

Oral laxatives include: Magnalax as mentioned above and DSS (veterinary surfactant). These may helpful in softening bowel content. An effective dose of DSS is 4-8 ounces per gallon of water given orally. Mineral oil (paraffin) has minimal effect in breaking down an impaction, as it will ooze past a blockage giving a false impression that ingesta is moving through the bowel. However, mineral oil will minimize toxin absorption from the bowel. Unfortunately, at the same time it will also diminish the uptake of glucose, electrolytes and water from the bowel lumen. If gastrointestinal toxins remain a concern, activated charcoal may benefit the horse.

### **Medications for Pain Relief**

Nonsteroidal anti-inflammatory drugs (NSAIDs) provide pain relief but must be used with some caution. Phenylbutazone (2.2-4.4 mg/kg IV) is the least expensive NSAID, but is the most ulcerogenic and nephrotoxic NSAID, especially in a dehydrated horse. Flunxin meglumine (Banamine®, generics; 1.1 mg/kg IV) and ketoprofen (Anafen®; 2.2 mg/kg IV or IM) are more expensive but less associated with toxicity than phenylbutazone. In horses that are dehydrated or when rehydration will be delayed, initial NSAID dosages should be reduced by 25-50%. Fluid deficits should be corrected as soon as possible and horses should be carefully re-evaluated before additional doses are administered.

Sedatives like xylazine (100-300 mg IV) or detomidine (5 mg) have relaxing effects to manage intestinal pain or muscle spasms. Xylazine also has diuretic effects. Recurrent dosing with xylazine or detomidine should be done with caution as both can temporarily slow intestinal and esophageal motility. This may add to the already present problem of an ileus and present an increased risk for choke. Butorphanol (5-10 mg) is a potent analgesic.

Tranquilizing with acepromazine (10-15 mg) is an excellent means of dilating the vascular beds in cramping muscles. However, its potent peripheral vasodilatory properties should be used with caution in a dehydrated horse as it could cause cardiovascular collapse and shock. For this reason, a dehydrated horse should receive adequate fluid replacement in conjunction with the use of acepromazine.

Corticosteroids are useful to inhibit the arachadonic acid cycle particularly related to effects of endotoxemia, however corticosteroids are not recommended in treatment of endurance metabolic disease because of the questionable influence on laminitis.

# RHABDOMYOLYSIS AND EXERTIONAL MYOPATHY

Myopathy, as seen in the ride and tie horse at competitions, is often related to a problem in energy utilization and electrolyte imbalances. It may also be heat or stress related or a result of storage myopathy. Early onset of a myopathy or "tying-up," within the first five to 10 miles, is one of the most challenging and, unfortunately, an all-too-common problem seen in this sport.

These horses might originally be seen on the trail with a shortening gait and can be apparent as early as five miles out. On stopping, this will gradually develop into a tight, hard muscle cramp in the hindquarter which can, and often does, progress in to a classic form of severe generalized tight muscle cramping. This results in reluctance to move, and an extremely painful animal. Some of these horses go down and should be left in place until some form of relief is administered. Any level of myoglobinuria is a sign of muscle trauma and should be a warning to the control judge or treatment veterinarian to attempt to avoid renal compromise.

### Treatment

Fluids are essential for flushing the kidney tubules and improving muscle and renal perfusion. Normal saline or other polyionic fluid would be the fluid of choice. A volume of 20-30 liters would be an appropriate amount to start with. Significant dehydration, if it is present, would require more fluid volume.

Oral fluid supplementation can also be used at a rate of 8-10 liters/30 minutes if IV fluids are unavailable or difficult to administer. Ileus must be ruled out and normal active intestinal motility must be present prior to using oral medications.

Tranquilizers, muscle relaxants, analgesics and non-steroidal anti-inflammatories are also beneficial to the tied-up horse under the appropriate circumstances. Useful drugs and their dosages follow. These are useful but because they can all be detrimental in the hypovolemic patient, care should be taken to use them only after a safe level of fluid volume has been established. These medications would include acepromazine (10 mg/400 kg IM bid to qid as necessary); xylazine (0.2 mg/kg IV); detomidine (10-20 mcg/kg IV) and flunixin meglumine (1 mg/kg IV). Butorphanol, as an analgesic, is also a good choice at the rate of 0.02-0.1 mg/kg IV.

Dantrolene is a non-centrally acting spasmolytic which acts by slowing calcium release from the sarcoplasmic reticulum. This results in muscle relaxation and is effective in treating the severe muscle cramping seen in the tied-up horse. The dose is 3-5 g orally. It comes in capsules and these can be opened and added to applesauce or administered by nasogastric tube. Slow IV dantrolene is also available and used at the dose of 15-25 mg/kg.

Heat, supplied over the cramped muscles, can come from many sources. Warm water

towels, chemically warm packs, or white's liniment will help increase the circulation and assist in the relaxation of the heavy muscles. Placing a space blanket or a plastic trash bag over the rump will help to hold the heat in over a long period of time.

Acupuncture may also prove to be beneficial, particularly in the pain management aspect.

#### Use of Muscle Enzymes for Prognosis of Healing

Creatinine Phosphokinase (CPK) has a high specificity for damaged muscle, peaking in serum within 4-6 hours of the insult. CPK is quick to return to normal once ongoing damage has stopped and it is a helpful predictor to monitor improvement and to help decide when a horse can return to exercise. CPK should return to <1000 micromoles/L before training resumes.

AST is slow to elevate, taking 24 to 48 hours to reach a significant elevation. AST takes weeks to return to normal and consequently provides poor predictive information.

# COLIC

Acute and sometimes severe colics are not unusual in the tired ride and tie horse. Colic is one of the most common conditions encountered in the competing endurance horse. Abnormal GI motility can result from travel, hyperthermia, dehydration or fatigue. The long-term exercise in ride and tie can result in a shift of blood from the bowel to muscles, resulting in poor bowel motility and considerable discomfort. Colic can involve extended care and monitoring as part of the diagnostic and treatment plan. In considering the diagnostic and treatment recommendations for colic, it is equally important to consider the realities and limitations that may be encountered in the field setting at an event site. In a competition setting, there will likely be potential problems with lack of help and equipment for administering fluids and ongoing care over a significant period of time. Consider also that engaging in a treatment plan that involves ongoing care will impact all other responsibilities that you may have at the ride including providing effective control of the ride. It is often prudent to recommend referral to a local veterinary facility for ongoing medical care and monitoring

Timely assessment of the cause of the pain is important and the risk of the horse damaging himself, other horses, or the people around him in a field situation should be addressed immediately. The pain is commonly caused by a slow bowel resulting in gas production, accumulation of fluid as in ileus, or impactions. Displacements, torsions, and intussusceptions have also been identified in the endurance horse. For these reasons, passing a nasogastric tube to diagnose and/or relieve gas or fluid from the stomach is important. Rectal exams are equally important. The danger of a fragile rectal wall due the dehydration is a real issue. A reminder of this is and the necessity of using good restraint and sufficient lubricant should serve to caution the treatment veterinarian but not to discourage him from using this diagnostic methodology.

The above information suggests that we use caution when horses are presented with poor motility. Stopping horses early is probably the best defense for the majority of colics seen in our sport.

# **DEVELOPMENT OF HYPERTHERMIA**

A hyperthermic horse, with a persistent rectal temperature exceeding 105-106°F, is at risk for more complicated metabolic disease. The following is a list of symptoms and suggested treatment.

### Symptoms of Hyperthermia:

- Note other signs of exhausted horse syndrome as above
- Panting
- Poor heart rate recoveries
- Stumbling/ataxia
- May feel hot to the touch; may not be sweating adequately or effectively
- Loss of mental alertness
- Disinterested in surroundings or environmental stimuli
- Can lapse into convulsions or seizures due to sensitivity of CNS to high temperatures.

### **Treatment of Hyperthermia:**

#### Intravenous fluids

Dehydration is a major contributor to heat stress so this must be addressed!

#### Cooling strategies:

- Cold water immersion in a lake or stream
- Continual dousing with water or pressure sprays, especially the head, neck, and lower limbs
- Fans or misting sprayers
- Ice boots on legs over large vessels
- Alcohol baths (one pint alcohol per gallon of water)
- Cold water enemas
- Stomach tube with cool water using small amounts at frequent intervals
- Remove all tack and equipment
- Shade.

Note that once rectal temperature drops below 103°F, active cooling can be suspended for a time so the horse is not chilled too quickly.

# LAMINITIS

The number of metabolic syndromes in the ride and tie horse makes the possibility of laminitis very real. There are multiple sources for this painful disease including concussion, endotoxins, exhausted horse syndrome, intestinal displacements and myopathies. Because metabolic disease may often be followed by acute laminitis, be prepared to treat both medically and mechanically at the outset. Supportive wooden wedge blocks, styrofoam blocks, or Lily pads can be taped to the bottom of the foot to stabilize the coffin bone.

# APPENDIX A RIDE & TIE BEST CONDITION JUDGING SHEET

EVENT NAME:	DATE	
TEAM NUMBER: HORSE NAME:		
HORSE OWNER:		
RIDER 1: RIDER 2:		
I. METABOLIC FACTORS	POSSIBLE POINTS	POINTS
Vital Signs: Pulse/Respiration, Mucus Membranes, Capillary Refill Time, Hydration, Gut Sounds	10	
Impulsion – Energy Level	30	
<b>II. MECHANICAL FACTORS</b> Surface factors, swelling, trauma, pain	10	
Soundness at trot	30	
<ul> <li>III. TIME FACTOR: Team Completion</li> <li>Time points will be awarded for a maximum of 20 points for the winning team. Succeeding teams will receive a percentage of 20 points, based on their time of arrival.</li> <li>Example: Time interval between the first and eleventh team is 33 minutes. Time interval between second and eleventh team is</li> </ul>		
26 minutes. So $26/33 = .79 \ge 20$ pts = 16 pts for the 2 place horse.	20	
TOTAL POINTS	100	

**Comments:** 

Veterinarian