Pacing Yourself During The Ride

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Tips and Hints for Endurance Riding

Pacing yourself during the ride

Once you are out on the trail the most important thing to remember is this:

- **RIDE YOUR OWN RIDE!** ....and
- **RIDE TO YOUR HORSE'S STRENGTHS**.

Endurance riding is a test of the individual horse and rider against the trail. To be successful you must have conditioned your horse for the TERRAIN you will be riding and pay attention to the SPEED in which you traverse the terrain with consideration for the WEATHER conditions. Your goal is to finish with your horse's energy resources still holding sufficient reserves so that the horse is still "fit to continue" down the trail.

SPEED

While you may like, and want, to ride with others, it is close to impossible to go at the pace you want and judiciously rate your horse's energy reserves when others are setting the speed. (See the segment on Riding in Company) Suffice to say: you are best to travel at your own tempo and speed so that -

- Your horse pays attention to YOU, and doesn't forget you are onboard in lieu of being sucked into herd mentality.
- You can pay undivided attention to your horse's condition, soundness, need for food and water, it's metabolic stability, and it's energy reserves.
- You pay attention to the trail -- the markings, the terrain, the turns, and the relative distance from check to check

The *average* speed that you will aim for - to finish in decent time with plenty of cushion built in for any problem issues - will be 7 to 7.5 mph. This is about the rate of a medium trot for almost all breeds. We threw up this gait mph chart on Page 1 under Conditioning, but we'll add it again here so you don't have to waltz about looking for it:

Gait	Small Pony	Large Pony	Horse
Walk	3 mph	3.5mph	3.7 to 4 mph
Slow Trot	4 mph	4.5 mph	5 mph
Medium Trot	5-6 mph	6-7.5 mph	6-8 mph
Fast Trot	6-7 mph	7.5-10 mph	9-11 mph
Canter	8-9 mph	10-14 mph	12-15 mph
Hand Gallop	12 mph	14-22 mph	15-25 mph

Keep in mind that "average speed" means the total sum of all speeds used throughout the ride. This means the walking speed you do going up (or down) hills, the cantering speed on the flat, and the fast trot speed you do, when you can, to make up time. On flat rides in non-hilly areas you can use your watch, logging time to determine the distance and speed. Unfortunately, speed can be difficult to judge on hilly or uneven terrain. Using a **GPS unit** to tell your horse's current and average mph and the distance you have traveled can be a great help keeping you on track.

A **heart monitor** is also an important tool to help you rate the horse. You want to maintain a gait that puts your horse's heart beat at an **aerobic level (80-150 bmp)**, and ensure the horse doesn't burn itself out by consistently being under **anaerobic (160-220 bpm)** stress.

- **Aerobic** conditions, also known as cellular respiration or oxidative metabolism, is where the body uses oxygen to convert energy-rich molecules such as glucose and fat into energy. It is the preferred energy pathway of cells to fuel metabolism. When enough oxygen and fuel is present during exercise, muscle cells can contract continually without exhaustion. The body uses first it's ready food, like the hay in the stomach and hindgut, and then stored sugar and fat in the body to burn for more energy. It provides energy to the body for endurance activities with lower intensity -- like trotting as opposed to galloping. Carbon dioxide, the only by-product, can easily be removed from the body simply by breathing. Recovery is quick, often in a matter of seconds, or minutes.

- **Anaerobic** is when carbohydrates are metabolized without oxygen to produce energy. The energy created by this type of metabolism should only be used for intense, high-level activities performed in a short period of time, such as sprinting. It is difficult to maintain for long periods of time, and quickly draining of the body's resources. Since anaerobic metabolism does not require oxygen, it must rely on other reactions to create the energy the body needs. Thus, waste molecules that can sore repeated muscle contractions are produced during exercise. This soreness in the muscles, called fatigue, occurs when lactic acid builds up faster than it can be carried away. As a result, activities with higher intensities will eventually slow down to the point where the body must stop doing the exercise completely because the amount of stored carbohydrates (glycogen) is used up. At the end of an exercise, breathing will stay at an increased level because anaerobic exercise is in an oxygen debt. Consequently, the oxygen must be repaid by continued respiratory activity. As a result, the recovery time of ATP for anaerobic metabolism is long, sometimes up to an hour or more.

TERRAIN

The terrain will tell you just how fast you will be able to go. On flat surfaces you can easily canter or gallop without burning up too much of your horse's reserves, and still stay at an aerobic level of stress. Hilly or mountainous trails, however, will demand a slower pace so that the horse's heart rate doesn't approach into the anaerobic range. Depending upon how athletic your horse is, and whether it is a "uphill" horse (one who likes going up slopes) or a "downhill" horse (one who can "ski" downhill at a trot or canter easily without effort).

The object is not to waste your horse's reserves walking where it can trot, or trotting where it could canter. When you are conditioning you ride to build up those areas where your horse is weak. In competition, you ride to your horse's natural strengths, and take care that the horse's weaknesses are carefully handled and monitored.

WEATHER

The weather in the mid-Atlantic area can range from incredibly hot and humid in summer to freezing snow and ice in winter. Whatever the weather, it will be a limiting or deciding factor on how fast you can travel, and how carefully you need to protect your horse.

- **Hot weather** - usually in the Mid-Atlantic hot weather includes high humidity as well. This weather condition can be hard on breeds that have heavy muscles. Stocky muscular horses just don't cool as well or as efficiently as wiry, thinner breeds. It is very important that the rider pay close attention to the heart rate and respiration. If they both get too high the horse may not be able to cool itself as quickly and may get overheated. Drinking is very important because it not only rehydrates as horse that is sweating, but it also cools the interior organs. Most horses have a good sense of self-preservation -- when it gets hot, they will drink. But when they don't, maybe having already had their fill, the best advice to follow is: "If you can't put water in them, put it ON them!" Every savvy endurance rider will carry a sponge on a rope during the ride. Sponging at every available water source is critically important in hot weather because water is an excellent conductor of heat. Cool water will instantly transfer heat to itself, pulling it from the horse's skin and, in turn, cooling the body. However, for the cooling effect to be effective, the sponging must be continuous so that fresh cool water is constantly replacing the used, warm water.

- **Cold weather** - brings with it a whole different set of circumstances. While you might not have to worry about your horse getting overheated, you will have to worry about chills and cramping. The most critical part of your horse's anatomy for suffering from the cold is the large muscle groups of the hindquarters. Always start out your warm-up and the first leg of the ride with a *lightweight* wool rump rug (quarter sheet) so that your horse's large hindquarter muscles have a chance to warm up without getting chilled. You don't need a heavyweight rump rug unless you plan on jettisoning it at the ride start. A lightweight rump rug can be carried along for the whole ride without retaining too much heat as the horse begins to generate it's own heat from exercise.

Always, always, always have a warm sheet or blanket to cover your horse's hindquarters when standing at a vet check, while eating at a hold, or anytime you have to stop and stand for more than a few minutes. Exercise will keep your horse warm, but once you stop your horse the sweat - the means in which the body cools itself - will immediately start to chill the horse. If you don't have a blanket KEEP MOVING your horse, walking in a circle, until you can throw on a blanket or wool cooler.

It is also important for the rider to dress warmly. Layer on clothing so that you can strip down, piece by piece, as the weather warms up. Always carry a cheap nylon rain poncho with you if you think the weather will turn nasty. They weigh nothing and cost even less. But they will do the trick to keep your body dry if it should start to sleet, ice, or rain. As long as you can stay dry, you'll stay warm.

- **Wet weather** - warm weather rain is really just an annoyance to the rider, not generally the horse. Most horses will ignore rain, unless it is accompanied by howling winds. In that case you can always use "ear bunnies" (soft fluffy 2" round pom-poms you can buy from the craft stores) to reduce the aggravation of wind blowing into your horse's ears. Even if the rain is gentle and intermittent, no matter how warm it is, you should throw a cooler over your horse when standing around, rather than leave it exposed to the elements. Just like a human will chill when standing uncovered out in the rain, a horse will, too, while it is still cooling down from exercise. Always carry a cheap plastic rain poncho with you -- in a pinch you can always cover the horse with it, if necessary.

Vet checks (aka "Holds") made easy

The various vet checks - also known as Gates into Holds, or just "Holds" - are located at various points along the trail throughout the ride. The vet check is no big deal as long as you understand the protocol. Just having your rider card ready and in your hand is 90% of the requirements. The only other one is to make sure your horse reaches the HR (heart rate) parameter as told to you at the pre-ride Briefing the night before. The pulse requirement will be anywhere from 60 to 68 bpm (beats per minute). Every hold has a specified minimum time in which you must wait until you can take your horse back out onto the trail. If you are running for the front you will want to spend only the minimum amount of time in the Hold so you will want to make sure your horse's pulse is already low BEFORE you reach the In-Timer. This is best accomplished by dismounting well before you reach the hold, loosening your horse's girth, and hand walking the horse to the In-Timer.

Step by Step Through The Vet Check:

Step 1. The In/Out Timer - this is the first person you will see as you finish each leg of the ride. They will call out asking you for your horse's number. They will write this information on their sheet, as well as the time you entered the Hold. Have your rider card out and ready for them to mark your in-time. At this point the clock starts ticking for your designated time to have your horse pulsed down to parameters. The In-Timer will direct you to the pulse takers as your next step.

Step 2. Getting the pulse down - Before you can take your horse into the Pulse and Respiration gate, your horse's pulse must be down to, or close to, the ride parameters as set by the ride's Head Vet and announced to the riders at the Ride Briefing the night before. The rules allow the horse 30 minutes to reach the stated HR (heart rate) parameter beginning from the time it was recorded as having come in to In-Timer. The horse's pulse must come down to parameter within that 30 minutes or the horse will be pulled from competition. For horses that are slow to drop their HR, or for high HR due to cooling in hot weather, it is smart to take a few minutes to sponge down the horse. This helps it to cool faster, and drop the HR quicker.

Step 3. Pulse & Respiration - also know as P/R. Once your horse has reached the pulse parameters (as announced by the Head Vet at the Ride Briefing) this is the next place you go. It is generally staffed by volunteers who will use a stethoscope to listen to your horse's heart rate, and verify that it has reached the proper parameter. The time they verified the pulse at parameter will be recorded on your rider card. Once your horse's pulse has been recorded at parameter the clock for the designated Hold Time starts ticking. Many riders chose to go directly from the P/R to the vetting to get everything done while their horses are still warm and limber. Some chose to let their horses rest and eat uninterrupted until it is near time to go out on the trail again. Some chose to wait until the lines at the vetting are thin or non-existent. Either way, vet now or vet later, is entirely up to the rider.

Step 4. - Vetting - bring your horse up to the vet area when you are ready. If it is busy you will generally stand in line for the next available vet. Always wait until you are waved forward to a free vet, then hand your card to that vet's scribe who will mark down the vet's comments and scores for your horse. The vet will listen and record the horse's pulse, then have you trot it out and back (in a straight line) to a specified distance of 30 meters to determine soundness and to start the 1-minute clock for the CRI check. Once the horse has come back, the vet will check the horse's vital signs - guts, lungs, capillary refill -- check the legs and back for any impending problems, then conduct a one minute CRI (Cardiac Recovery Index) to determine your horse's level of fitness. A good CRI is an equal or lower pulse one minute after the trot out compared to the initial pulse taken by the vet. A poor CRI is one where the second pulse is appreciably higher than the first, indicating the onset of exhaustion. If the CRI indicates severe exhaustion is taking place, the horse can be pulled by the vets.

Step 5. - Getting Your Out Time - Once your horse has passed the vet exam you will take your card to the In/Out-Timer to have them mark it with the time you are allowed to leave the hold and go back out on trail. The out time is based upon: the time your horse was recorded at pulse + the total pre-designated hold time. You are free to stay in the hold as long as you like past your out time, except for holds that having closing times, or if it prevents you from reaching the next hold before closing. No rider is allowed to leave the hold ahead of their out time. To do so will result in disqualification from the ride.

Step 6. Waiting out the hold - The hold time is for you and your horse to rest, relax, eat, drink, pee, and cool out before it is time to go out on the trail again. Set out your horse's feed and hay and water, put on a cooler if the weather calls for it, and let the horse relax and eat. If the hold did not call for saddles to be off for the vetting, take the time now to remove the saddle and inspect the horse's back. Don't forget to fuel yourself -- you are every bit as important to the team effort. Refill your water bottles, stock your saddle bags with carrots and apples -- food that you and your horse can both eat on trail -- and mix up your horse's electrolytes to give before going back out onto the trail. Check the horse's shoes, or boots, to make sure everything is on tight and no nails are loose. Switch to a clean saddle pad for the next leg of the trail -- your horse will love you for it. If your horse is still eating well, or napping, you are free to stay as long as you want at any hold EXCEPT at holds that have a closing time, or if you are cutting it so close that you will fail to complete within the time allotted.

As the time comes close to your out-time, saddle your horse, check to see that all your equipment is on straight and properly adjusted. Put away your coolers, but let your horse keep eating. About 2 minutes before your out-time, give your horse it's electrolytes, make sure you have your rider card stashed in a safe place on you or your saddle, walk your horse around to loosen up any stiff muscles, then mount up.

Step 7. Back out on Trail - About 30 seconds before your hold time is up, ride over to the In/Out Timer, give them your number so they can checkmark you on their in/out sheets, and then wait there until the final seconds of your hold time are up. There should be an official clock at the Timer location for you to watch and wait for your time to be up. Once the clock reaches your out time, thank the Timer (so they know you are leaving), and head back out onto the trails at an easy trot.

Eating is a GOOD thing!

If there ever was a moment during the hold that you'd want to pull your hair out, it is when you are trying to entice your horse to eat at a hold. Rest assured most of us have been there, attempting to get a picky horse to eat something! Anything! First we'll take about why it is important that your horse eat. Then we will give you some tips you can try to whet your horse's flagging appetite.

The horse, and the importance of eating (in scientific garbon):

The equine mouth is the beginning of all digestion. Here three salivary glands, that produce up to 10 gallons of saliva a day, kick off the digestive process. This is where carbohydrate break down starts with the enzyme amylase. Bicarbonate, a buffer to amino acids of the stomach, is also launched. The Esophagus, the 5-foot long muscular tube, forwards masticated food from the mouth to the stomach. This really only comes into play with trouble if food is “bolted” (consumed quickly with little chewing) as horses possess no reflux capability. The stomach makes up only 10% of the capacity of the entire digestive system and **has only 4 gallon capacity**.

The horse's digestive juices, which are in constant production, are not on the same program as the digestive juices in a human's stomach which only "turn on" when there is food available. Food passes rapidly through the stomach and it is important to note that very little fermentation occurs in the stomach as it leads to the formation of gas to which the horse has no natural recourse. While there is little fermentation in the stomach, the stomach acids are strong and do not pose significant problems so long as they are put to positive use digesting fats and amino acids. If the stomach is not fed frequently and allowed to empty, the stomach acids rapidly attach the unprotected (non-glandular) squamous cells in the saccus caecus region and can quickly ulcerated the stomach lining. Fermentation is slowed even further in the fundic region. The pyloric region is where the stomach joins with the small intestine and fermentation ceases and protein digestion accelerates.

In a nutshell -- with such a limited stomach capacity, a horse needs to eat every 13-15 miles to prevent the stomach acid from splashing up into that are prone to ulceration. Equine stomachs constantly produce hydrochloric acid which eats away at the mucosal lining --the sensitive, unprotected upper parts of the stomach. When the horse is moving the abdominal muscles are contracted, forcing the stomach’s hydrochloric acid into the upper stomach bringing the lower acid producing sections closer to the sensitive upper areas that do not have the protective lining to prevent destruction of the digestive tissue. When the stomach is full, the splashing up of acid is significantly reduced.

The small intestine represents 28% of the horse’s digestive system. It is 70 feet long with a 12 gallon capacity and the location of the more “serious” digestive processes. It is here that the intestine joins forces with the pancreatic enzymes to break down carbohydrates into sugars and starches, the proteases breakdown proteins into amino acids and the lipases and bile (directly from the liver) emulsify fats. 30-60% of all carbohydrate absorption, nearly all amino acid absorption, and the absorption of vitamins A, D, E, K and minerals calcium and some phosphorus occur in the 30 to 90 minutes it takes food to pass through the small intestine.

The large intestine has five basic parts is about 28 feet long and consists of the cecum, with a 10 gallon capacity, the large colon, the small colon, the rectum and the anus, all of which make up the “hind gut” and the location of the fermentation process. This occurs via microbial digestion over extended periods of time (7 + hours). Vitamins and fatty acids are the product of this fermentation and they are absorbed in the cecum. B vitamins and some minerals i.e. calcium and phosphorus are absorbed in the large colon fermentation. It is important to note that the large colon microbes responsible for the fermentation become feed specific and as it contains numerous “out pouches” it is potentially a location for gas colic or “twisted gut” torsional or volvulus colic.

Essentially the equine digestive system is a complicated system designed to process frequent small amounts of food. When food is not present, ulcers have an open door. Horses with ulcers don't want to eat because their stomachs hurt. It's a vicious cycle -- a Catch 22. So, to prevent the gut and stomach from falling prey to upsets, you want to keep your endurance horse going with a full stomach. The best feed is bulky (alfalfa) hay, and/or grass, a fibrous food which encourages chewing and saliva production to buffer the stomach, which is full of sugar and water. Beet pulp, the fibrous byproduct of sugar beet production, is also a decent feed -- if you can get your horse to eat it.

Tips and Hints to keep your horse's guts working, and to keep your horse eating:

To protect the stomach:

- Brewer's Yeast -- the pro-biotic that is found in all horse feeds to help the gut process food. You can buy it at most feed mills -- about 4-5 ounces/day for the endurance horse are about what is needed for the gut to perform at optimum.

- Stomach buffers -- be careful that whatever you use is not on the forbidden substances list. AERC is a "no drug" organization -- meaning all endurance horses have to perform on their own natural abilities and may not be given any performance enhancing drugs. The AERC website at www.aerc.org has a list of what is acceptable to be given to the horse, and what is forbidden. Allowable stomach acid buffers are Maalox, Tums, and CMC. Often this is given with the electrolyte dose; sometimes it is given alone. However the best thing you can give is food -- carrots, apples, horse cookies, and hay cubes -- so that you don't have to agonize over whether the product you give will get you disqualified.

To keep the horse eating:

- Swap feed -- Murphy's Law says that the feed your horse gleefully inhales at home will be view with utter distain at an endurance ride. If you can borrow some feed from someone else and give it to your horse then you can guarantee... it will be eaten. Sometimes it helps to bring a different type of feed to the ride -- something your horse doesn't normally eat -- to tempt it into eating.

- Grass grazing - is the horse's #1 choice of food. It is loaded with sugars, minerals, water, and electrolytes -- and most horses will choose it over grain when on a ride.

- Alfalfa - is the horse's #1 choice of hay. The high levels of calcium in alfalfa are an excellent buffer to stomach acid, and the high level of protein, plus excellent forage, makes this hay the best you can give any horse. Plus the sweet, rich taste is second to none. Don't worry about feeding too much of it at an endurance ride -- the amount of work your horse is doing will more than offset the increase in protein.

- Oats - are excellent for the working endurance horse. Since the 1800's, horsemen have recognized the quality factor of endurance in this grain -- which is why it has been the diet of a million racehorses since those early days.

- beet pulp -- is high in sugars and fibers. However, many horses who will eat it at home will steadfastly refuse to eat it during competition. If you want to offer beet pulp, fine. But I would suggest having a backup feed when your horse turns it's nose up in the air.

Paying attention to trail markings *or* "Ten Easy Ways To NOT Get Lost"

The best way not to get lost is to .... pay attention. That's too easy, right? OK. How about the ten best way to prevent you from getting lost on trail:

1. More riders are lost as a group then those riding alone. It is really important that you don't get so involved in chatting with your friends that you blow right past the trail markings. Many times it will be too late before you realize you are miles off the trail... with no option but to travel all those miles back to pick up the trail again.
2. The leader of your group can't always be trusted to go the right way. No matter how secure the person in the front is that they know where they are going, always keep your eyes peeled for the ribbons.
3. Don't take any shortcuts! Not only is this grounds for elimination (unless you go back and do the trail in the proper order and direction) but you also run the risk of getting into unsafe terrain.
4. The trail may change from year to year -- don't ever expect it to always be the same.
5. Trust your map or trail description. If the trail master told you to expect something at a certain mileage on the trail as a confidence marker, pay attention to when and where you see it.
6. Look for the confidence ribbons. Often the Trail Master will place ribbons where they are in the line of sight from the prior one. Always make sure they are on the proper side (if you have been told all ribbons will be on the left or right of your direction of travel).
7. If the hoofprints are going the opposite direction ... you are probably going the wrong way! Stop, consult your map or your trail notes to see where or when you took a wrong turn. Chances are it was only just a short distance back down the trail. Turn around and go back to where you see the spot where you turned wrong, and correct yourself to head the proper direction.
8. If there are more than one loop marked in different colors, make sure you are always following the proper color in the proper order.
9. Vandalism isn't limited to the inner city. Hikers, bikers, and casual trail riders can remove ribbons or signs off even the most protected trail. If the ribbons suddenly stop, or make a turn that looks both wrong or dangerous, or both, CONSULT YOUR MAP or trail directions. If you are sure the trail is wrong, go back to where you felt confident it was right, or until you meet a spotter sent out by ride management to take down horse numbers. They can either assure you the trail is correct, or call into ride management for verification.
10. Keep your eyes up, open, and PAY ATTENTION!

Surviving a pull

There is an old saying that "somewhere out there on the trail is a rock with your name on it". Which means there will come a time when, one day, your horse will judged by the vets as "not fit to continue". There is no dishonor in being pulled - it happens to the best of riders. Be it lameness or metabolic issues, the two most common causes for pulls from the competition, or just a general feeling by the rider that the horse is NDR ("not doing right")...the key thing to remember is: your horse is being pulled from competition to protect it's welfare.

- **Lameness** is usually luck of the draw: lost shoes leading to sore soles, stepping wrong on a rock, twisting an ankle, pulled suspensions, or any other ills that can affect the legs can cause a lameness great enough to cause the horse to be pulled. Take care that you do "shoe checks" periodically on trail to catch any impending shoe problems. Slow down when the trail gets rocky, boggy, slick, or trappy. It is better to err on the side of caution then have to walk a lame horse back to the vet check. Sore backs can also cause lameness so make sure you check your horse's back at each vet check to ensure your saddle fits the horse comfortably and not pinch or cause sore spots.

- **Metabolic** can be any number of things ranging from poorly functioning guts due to lack of food and stress, dehydration, and lactic acid build-up, to a whole range of additional problem that can send a formerly healthy horse down the path to one needing medical attention. It is highly important in this sport to pay close attention to the horse's heart rate, respiration, and overall general feeling of mental health before, during, and after the ride. It is not uncommon for a horse to be fine throughout the ride, only to succumb to a metabolic issue shortly afterwards.

When your horse is pulled from the competition, the ride vet keeps your rider card to give to the Ride Manager. If you are at an away vet check the Ride Management will have an emergency trailer to take you and your horse back to base camp. If it is a lameness issue you should be free to leave directly for home. If it is a metabolic issue, you need a verbal release from the Treatment Vet before you can leave. If the problem is immediate and critical - such as a tie-up or a condition requiring fluids or pain medication - your horse will be treated at the ride site (generally base camp where the emergency equipment is located) until your horse is stabilized. After that, the Treatment Vet will release you to take the horse home. (Please note: any treatment outside the normal scope of the soundness vetting of the endurance ride will be an independent and separate charge of the treatment vet to the rider.)

The best way to avoid getting a pull is to ride sensibly and well within the physical limitations of your horse, the trail, and the weather conditions.

  

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