

ALLOWING FUNCTION IN THE EQUINE ATHLETE

Over time hundreds of breeds of horses have been developed to provide specific function and / or aesthetic appeal. With this specialization has come differences in conformation that allow specific desired functions to be optimally performed. This is not to say that any breed of horse cannot go trail riding, or that any breed of horse cannot be used in a variety of ways; only that once a breed becomes specialized the owner, trainer, and veterinarian should respect the unique attributes of the breed and modify their expectations, training techniques, and treatment protocols accordingly. If we have specific goals in mind in our equestrian pursuits we should select athletes appropriate for the performance objective and then train them accordingly.

The Ferrari automobile was developed and designed to provide speed and handling on level roads at high speed. We would not buy a Ferrari, equip it with off-road tires and go out in the desert. Similarly, most people would not have a one ton pick-up truck lowered and outfitted with street tires when planning to pull a goose-neck trailer. You are smiling, but you get the point. Yet we push our horses to unsoundness and create disappointment for ourselves when we don't apply the same logic to our expectations, training and treatment programs that we would apply to vehicle purchase and use.

The American Quarter Horse is a good example of breed specialization. The original short, stocky Quarter Horse was developed to provide short bursts of high speed travel going in a straight line. If you look at the body type of the original Quarter Horses you see big hindquarters (the motor), a short powerful back and a level neck set. This is a sprinter. This horse can catch a steer, run a barrel pattern, separate cattle or spin on his rear end better than any other individual overall. However, in order for this athlete to deliver maximum performance we must respect his unique conformational attributes.

However, if we force a Quarter Horse to travel with his neck below level, as in many Western Pleasure classes, we have lifted his hindquarters, his "motor", off the ground and jammed his front end into the ground. (picture #) Further, if we force his face up to or past vertical in a false head-set; we force him to try to flex at the poll beyond what his conformation is likely to allow. And, now that we have him completely jammed up, let's ask him to drop his hocks and slide and spin in the current stylized reining configuration..... In just this short paragraph we have short-circuited all of the animal's conformational attributes to achieve a look that is not only "tweaked" past function but grossly uncomfortable for the animal. If we think about it logically it is no wonder the front feet are sore, the shoulders are sore, the neck is sore, the back is sore and the hocks are sore. After "sore" comes permanent damage to joints, soft tissue, and the animal's ability to do any job.

The modern Arabian Horse has been developed from the ancient desert bloodlines. Originally built for stamina over long distance, these animals were also selectively bred for a neck set above level which allows more vertical motion of the forearms than is possible for a Quarter Horse. The long elegant neck with a refined throat latch allows for flexion at the poll and a vertical face when in the bridle. And, the short flat back and croup and the sculpted head provide a visual aesthetic appeal that few viewers can resist. Again, as with the Quarter Horse, in order to maximize the horse's athletic potential we must respect both the conformational advantages and limitations of the breed.

Even with the naturally high neck set of the modern Arabian Horse we must be careful not to over-train and create a false elevation with the inherent inverted neck and hollow back. Almost immediately, when the neck is inverted and the back hollowed, the horse becomes sore in the back, the sacroiliac region, and probably in the joints of the rear limbs. Additionally, it is never appropriate to force a horse's face past vertical. With current Arabian Horse show bridles which hold the mouth shut, not only does the past vertical face unbalance the horse and cause neck and shoulder problems, but it creates tremendous pressure and dental discomfort. In order to minimize mouth pain when his face is forced past vertical in the bridle, the horse locks his poll and becomes rigid in the bridle and heavy on the rider's hands. In this contrived manner of going the horse becomes sore in the mouth, poll, neck and shoulders. Next, in order to allow elevation of the front end and the extreme front end motion of which the modern Arabian Horse is capable we ask him to squat behind and move up under himself. Overtraining in this position will cause damage to the hocks and stifles if appropriate conditioning and shoeing is not an integral part of the management of the horse. If we plan to capitalize on the unique physical attributes of any breed and maximize natural ability we must be prepared to provide support to the athlete in the form of sufficient conditioning, appropriate hoof-care, whether barefoot or shod, prophylactic dental maintenance, adequate protective gear and comfortable well fitted tack.

Another glaring example of potential inadvertent over-enhancement of natural ability is horses of any of the modern gaited breeds. These individuals were selectively bred to create a comfortable forward-moving way of going. They were developed on two continents to provide all day transportation for the rider without physical discomfort to the horse or rider. The original gaits were efficient, balanced and smooth. Much of this original concept has been overshadowed by individuals presented to the show ring and judged on stylized enhanced criteria that bear little resemblance to the original breed representatives. Heavy shoes, painful feet, inverted necks and hollow backs may create extreme "action" in the short-run but these training gimmicks will certainly be career and even life limiting if routinely applied in any training program.

These are just three breed / type specific examples of various demands we make on modern show-ring animals. I have provided them not as a condemnation of the horse show industry. I strongly support the horse show industry. The horse show industry supports equine health research and nutritional advancements; publicizes and promotes a glorious species; and allows a true bond between human and animal in a largely non-rural society. I have provided these examples to bring to attention training and care methodologies of which every horse owner and rider must be cognizant so we can avoid damaging our largest companion animal.

The horse is a quadruped which is designed to carry his weight on four feet, balanced 60% in front of his head to tail mid-point and 40% behind that mid-point. He is designed to carry weight equally left to right – 30% on each front foot and 20% on each back foot, on average, over time. He does not naturally carry most of his weight on the haunches, slide forward over distance, or spin repeatedly in place. Likewise he does not naturally trot or canter in place or cross his front and rear legs repeatedly to travel to his left or right. He does not by choice jump over six foot vertical obstacles. And, he does not as an evolutionary advantage perfect his own cadence and audible rhythm while moving repeatedly across a sounding board.

The horse is an inefficient herbivore which is designed to graze almost continuously when not sleeping or avoiding predators. The dietary requirements of the original free-range horses were met by foraging at various heights on a variety of plant materials. There were no concentrates, supplements, or predetermined meal times. Feed was not pre-ground, heated, extruded, or hung from the wall.

The original free-range horse did not perform any unnecessary physical activities. If an action did not pertain to eating, sleeping, escaping predators, or reproduction (including maintenance of herd hierarchy) the “wild” horse wasn’t a participant. These individuals did not climb mountains to see what was on the other side. They went around the mountain only in response to diminished feed or increased predation. They did not chase other herbivores across the prairie and drag them back to the fire for branding. And, they did not travel more than a few miles in a twenty-four hour period.

Originally horses did not hold their head or neck in a fixed position for more than a few moments at a time. Nor did they hold their mouths tight shut locking their molars together over prolonged periods of time. And, they certainly did not invert their necks or hollow their backs in order to exaggerate production of their natural gait or way of moving forward.

We, as horse “lover’s” have done all these things to our animals. We feed high density meals at times and consisting of products that are convenient in our daily work schedule. We often ask our horses to be weekend warriors. And we ask our horses to move in ways that we find pleasing while wearing tack that increases our comfort, security and control while riding.

So how can we enjoy our horses without injuring them? How can we train them to do what we want them to do without torturing them? How can we keep them healthy and happy in the unnatural environment we provide for them?

Let’s start from the ground up. Provide hoof care that is appropriate for the job the horse is asked to do. All horses need a balanced foundation in order to protect the joints of the boney column. In some cases the veterinarian and farrier need to work together utilizing radiographs to achieve medial to lateral balance of the coffin bone within the hoof capsule which then allows the boney column of the leg to move without uneven pressure from the ground strike of each stride. The sole plane within the hoof capsule must be neutral or positive to avoid damage to structures within the hoof capsule and the joints of the pastern and ankle. Further, extreme movement requires specialized support – hence the trailers on the hind shoes of English Pleasure horses and reiners. Trail and endurance horses need protection from rocky uneven terrain – hence pads under shoes or removable boots for barefoot horse. High front end motion is enhanced by shoeing packages that add weight in the form of multiple pads, hand forged shoes of heavier stock or added bars. However, no matter what specialized farrier work is done the key to longterm comfort and soundness is balance of the hoof / leg column.

Any equine athlete, whether it be in a daily training program or the more common weekend warrior schedule, needs a diet that meets caloric requirements, that provides vitamins and minerals, and that can be provided routinely without significant or sudden variations. Availability of feed products varies with region and climate. There are hundreds of products to choose from. There are thousands of opinions. The most important concepts to remember include 1) buy good quality products, 2) feed the same products on a daily basis, 3) keep it simple.

Like human athletes, the horse that is exercised daily, utilizing a variety of exercise modalities is more likely to stay healthy and sound than an animal that only gets intermittent hard workouts or an animal that performs the same repetitive movements during every training or exercise session. Intermittent hard workouts tear down muscle fiber, strain tendons and ligaments and create electrolyte and metabolic upsets than can lead to significant loss of function.

Repetitive motion without variation produces wear and tear injuries especially in joints. Creative variation of training routines will keep the horse physically and mentally sound far longer than irregular workouts or an unrelentingly repetitive drill.

Dental health has different significance for the horse than for ourselves. Horses must grind coarse feed stuffs to extract the nutrition. The power of a horse's masseter muscles is amazing. Because of the strength of the muscles of mastication, if the grinding surface of the molars is uneven unbalanced pressure will be put on the TMJ joints causing extreme discomfort. Sharp points on the buccal (cheek) side of the upper molars and the lingual (tongue) side of the lower molars can make chewing a painful process. Further, when we put a bridle on a horse that has not received prophylactic dental care, the cheek pieces of the bridle push unmercifully on the sharp points on the upper molars while the nose band forces uneven molar surfaces together causing unrelenting pressure on the TMJ joints. The answer to a horse that behaves badly in the bridle is often correction of dental discomfort rather than increased intensity of training.

Well fitting saddles and bridles allow horses to perform optimally. A badly fitted or inappropriate saddle can cripple a horse just as quickly as poor farrier work or an overly intense training schedule. A badly fitting saddle can seldom be completely corrected by adding more saddle pads, just like badly fitting boots do not get better with more socks. A good saddle pad can however enhance the comfort of a good saddle. Types of saddles and pads are very job specific but a comfortable fit for both horse and rider is the goal when choosing any saddle. Bridle fit is important also. Headstalls that pinch the base of the ears, curb chains that rub or cut, bits that are too small or too heavy or too harsh can cause significant irritation and pain. Beyond the physical distress that can be caused by badly fitted tack, there is significant mental duress for a horse that is asked to perform when grossly uncomfortable.

Once we have our horses comfortable on their feet, on a good diet, receiving regular beneficial exercise with healthy mouths and well fitted tack all we have to remember is that there still are no short cuts to a well-trained horse. The best we can do as owners, trainers or veterinarians is to remove as many road blocks to success as we can and then take sufficient time to allow the horse to succeed at the tasks we assign him.