



The Informed Arizona Equestrian
HORSE HEALTH SERIES

Chiropractic Care for Horses: Facts and Mythbusters

Elizabeth A. Greene and Madelyn Melchiors



Roper was, as his name suggests, a team roping horse in his former life. He now enjoys the majority of his days, at age 22, as a roany-pony pasture ornament. When he is ridden it sometimes feels like he has a little “kink” in his back and needs some round pen time with the saddle on for some good bucks before mounting. He also has some stringhalt (exaggerated lifting of hind legs) at times when he is getting warmed up and is occasionally found leaning against his stall wall when he spends time inside. When the opportunity came up to see what a chiropractic evaluation and treatment would find/fix, his owner jumped on it.

Why do horses need chiropractic care?

Horses are incredible athletes and can perform well with many handicaps and minor issues. Whether these issues come from overexertion or overuse from long term riding or competition, rough play with pasture mates, or even a “bad roll” over a rock in the pasture, aches and tweaks can occur. Like humans, horses will compensate by “not using” or not flexing the part that is sore or painful. The more they compensate, the less flexible that joint will become. Ultimately, that joint restriction, whether it came from the injury or the avoidance, results in what chiropractors term a vertebral subluxation complex (VSC). These can cause handicaps that inhibit movement, create pain and discomfort, and reduce performance. Older horses are more susceptible to loss of spinal flexibility and muscle strength, contributing to a lack of performance or increased discomfort and poor mobility. That is where chiropractic work may be able to come in to relieve pain and restore freedom of movement to the locked up joint. Chiropractic manipulation, or adjustment, treats the VSC thereby restoring the spinal cord’s function and improving the animal’s comfort and performance. The best yet is that chiropractic adjustments are drug free. This article will explain the steps of the full equine chiropractic visit, from start to finish. We will be using a sandwich as our analogy, as we all know how satisfying a well made sandwich can be!

A solid and complete chiropractic treatment for your horse will include much more than just loud “bone cracking” and leg pulling and/or jerking. It begins with a detailed history of your horse’s actions and activities, a thorough evaluation of the horse (both moving and standing), chiropractic adjustments to the problem spots, and a treatment plan for getting and keeping your horse comfortable with a healthy



Figure 1: Roper at 16 years old riding down the wash in Tucson, Arizona. Photo credit Betsy Greene.

freedom of movement. The chiropractic process needs all of these components to provide the most effective treatment and potential long term benefit for your horse. Without all of the parts of this chiropractic “sandwich”, your horse will not have the best opportunity to improve.

The Basics of Veterinary Chiropractic

The complete sandwich

Veterinary chiropractic is a method and philosophy that works to restore and maintain a properly functioning neuromusculoskeletal system through joint manipulation. In order for the nerves to be able to provide information from the brain to the rest of the body, normal things must occur. Healthy blood flow and circulation must be maintained so

Definitions

Vertebral Subluxation Complex (VSC): VSC is a technical term for a joint that is not fully functional and is limiting mobility. The bones in the joint are NOT dislocated, they are simply less mobile and/or functional.

Chiropractic Adjustment: The misalignment is corrected via a quick, short, thrust in the plane of the joint. This is a high speed, low force, maneuver that moves the joint slightly beyond its normal physiological range of movement.

Chiropractic Listing: The formal nomenclature used to describe the VSC and what direction the joint needs to be adjusted. Examples include Proximal, Proximal Left, Proximal Right.

Motion Unit: Commonly thought of as a joint. It includes two adjacent bones and the “stuff” in between them. This includes spinal discs, ligaments, muscles, lymphatic fluids and more!

that the muscles, joints, and spinal discs receive the oxygen and nutrients they need. This allows for normal joint movement. When an animal loses normal flexibility of its joints it will result in stiffness and muscular tension. Vertebral subluxation complex (VSC) is a technical term for a joint that is not fully functional, limiting mobility. The chiropractor is essentially using their hands to restore function to any VSC found during evaluation. The goal of chiropractic treatment is to address neurological dysfunction in the spine and restore mobility.

How long does a chiropractic visit take?

A typical treatment takes between 30 to 60 minutes including: collecting a history, evaluating the horse, adjusting the horse, and formulating a plan. New horses will take longer as the doctor will take time to understand the horse's history and issues. The horse's willingness to participate, aka stand still, during examination and adjustment also influences the length of time.

How to Assess a Horse

Background Information

Bottom bread slice

The horse's background information is where everything starts, just like the bottom piece of sandwich bread. The doctor will gather information from the history to get some clues on areas the horse might need assistance. Other important details include the signalment (e.g. age, breed, gender), and the types of riding, training, showing, etc., that the horse is used for and how often.

The age of the horse influences how agile their joints and tissues are. Certain breeds may have a different number of vertebrae in their body (e.g. Arabians). The riding discipline and the type of environment the horse lives in provides more information to put the full picture together. Does this horse need to stop hard and fast, be able to jump high, or have excellent strength in its head and neck? Does the horse carry

unbalanced riders such as lesson horses and therapeutic riding horses? Is there a chiropractic issue that is preventing this horse from performing its job?

Is the horse a candidate for chiropractic/spinal manipulations?

Another important first step, before the doctor puts their hands on the horse, is determining if chiropractic adjustment is safe for that animal. Foals, geriatric horses, pregnant mares, performance horses, pleasure horses, and horses recovering from an injury can all benefit from chiropractic care. Horses that are unstable on their feet, fall over easily, have a fever, illness, or acute major lameness that has not been diagnosed, are NOT candidates for a chiropractic adjustment.

Do NOT Adjust

1. Horses not currently under the care of a veterinarian with undiagnosed lameness or undiagnosed health issues.
2. Horses in shock or soon after an accident.
3. Horses who have an unstable joint due to an injury.

Gait Analysis and Palpation of Horse Standing Still

Lettuce and mayo

After gaining a thorough history (bottom bread slice), the chiropractic exam is next. This may incorporate facets of veterinary medicine, however we will be focusing on details that pertain to the motion of the body. The chiropractor will observe the horse's stance in detail. Does he stand square and at rest without pointing or camping out his legs? How is his muscling along the axial skeleton? Does his spine have lordosis or kyphosis? Are there any bones that appear to be enlarged or feel different than normal (“hunters bump”, “knocked down hip” etc). Scars, swollen joints, and injuries are also noted, in all areas of the horse's body, including legs, neck and head. Lastly, the feel of the horse's skin and muscles under the chiropractor's hands is noted. Does the skin glide smoothly and easily, or are there areas of restriction or heat? A gait assessment is performed last, with observations made on any toe dragging, uneven hoof placement, or lameness.

The Chiropractic Exam

Axial Skeleton: The bones in the body that make up the neck, withers, back, and sacrum. The legs are excluded from the axial skeleton.

Lordosis: Commonly called “swayback”. When a horse's thoracic spine sags downwards towards the ground.

Kyphosis: Commonly called “roachback”. When a horse's spine (from withers to sacrum) arches upwards away from the ground.

Proprioception: The horse's awareness of his own body's position.

What is a Joint Plane?

Each joint has a variety of ways that it can be “out”. For example, if there is a subluxation in the withers area, it could be subluxated to the right, left, or up. The chiropractor has to take that into consideration when they make the adjustment by moving with the plane of the joint to move it back into its proper location. To understand this more clearly, take a look at the skeleton (Figure 4) and notice how different each area of the spine appears. If the chiropractor is not applying pressure in the correct plane of the joint based upon the “direction” of the subluxation, it can cause the animal discomfort and not be as effective.



Figure 4: The equine skeleton - see how the withers (right side) have a sharp angle where the lumbar spine (far left side) is more vertical in orientation. Photo credit Madelyn Melchiors.

Motion Palpation and Adjustments

Meat of the sandwich

Now that the chiropractor has gathered clues on the horse’s motion and joints, they may put the horse through some range of motion exercises. This is the meat of the sandwich, the good stuff! The doctor is testing joint freedom by pushing down and up to see if things move freely. A joint that is not healthy or normal will have a lack of movement when precise and gentle pressure is applied and then taken away. This could include gently tipping the head and neck, while a hand is placed over certain motion units (joints) or standing on foam bales/a stool and leaning over the pelvis and spine and pressing down.

If a lack of motion is detected, that often indicates a VSC exists and an adjustment should be performed. Most often, the chiropractor will be “scanning” the joints for restrictions, and then making an adjustment as they identify problem areas. After the adjustment, they may choose to then put that joint through a range of motion test again, to ensure the adjustment was satisfactory.

A chiropractic adjustment uses gentle and precise movements, which are the key to success. Even though a horse is quite large, a twitch of the hand or arm is often all that is needed. A very effective adjustment may not be obvious to the average person watching a chiropractic session. The misalignment is corrected via a quick, short, thrust in the plane of the joint. This is a high speed, low force, maneuver that moves the joint slightly beyond its normal physiological range of movement.

To understand the normal range of movement, think about the difference between somebody interlocking their fingers and stretching their arms away from their body. A finger pulled backwards beyond normal range (extreme over flexing of the joint) is very painful and beyond normal physiology. The chiropractic adjustment more closely conforms to the slight stretch of the joint. If correct technique is used, the ligaments are NOT adversely affected.

Post Adjustment Plan

Upper slice of bread

After all joints have been assessed and properly adjusted, the chiropractor may opt to watch the horse walk and trot to visualize any changes in the horse's comfort and performance. Once the horse's response to treatment has been

Flat Hand vs. Full Hand Running Along Spine

When you have a flat hand against your horse's vertebrae, you should feel full muscles underneath. If your hand is caving inwards (muscles are scant underneath), this indicates suboptimal muscle mass. You always want to have a cupped hand, indicating good muscle development.



Figure 2 (left): Dr Melchiors is feeling Roper's muscle development along his spine. See how her hand is cupped around his C2 vertebrae region.

Figure 3 (right): In this photo Dr. Melchiors' hand is collapsed over Roper's thoracic region behind his withers. Photo credit Betsy Greene.



Figure 5 (left): Dr. Melchiors feeling Roper's tissues. Tape pieces represent where his cervical vertebrae are located.

Figure 6 (right): Dr. Melchiors is standing on a blue bale asking Roper to bend his neck while she motion palpates his joints. Photo credit Betsy Greene.

evaluated, some simple stretching exercises or a few days of rest may be recommended. Other times muscle strengthening and conditioning exercises may be recommended. Most performance horses during peak season will receive spinal manipulations every 4 to 8 weeks. Other horses with a more sedentary lifestyle benefit from care every 6 to 12 months.

What About Roper?

Case study

“Roper”, 22-year-old Appendix Quarter Horse gelding, used primarily for occasional pleasure riding. Previously used as a heading horse in team roping. Located in Tucson, Arizona.



Figure 7: Roper on a ride in the desert in Tucson, Arizona. Photo credit Betsy Greene.

Roper’s history, first slice of bread, involved a report from his owner of occasional discomfort in the withers and pelvic area, leading to reluctance to move freely under saddle as well as bucking during warm up in the round pen. He also has an ongoing history of mild stringhalt-like symptoms. He occasionally presents with an odd behavior of backing up against hard surfaces and pushing his tail head against them. He has not been ridden in the last few months and he is either in a stall with a small pen or turned out in the arena. Roper could also be categorized as an older horse, so he is at increased susceptibility to loss of muscle strength, joint degeneration, and abnormal musculoskeletal compensations. This old guy can use some help!

Roper’s chiropractic assessment, mayo and lettuce, revealed a normal stance and mostly normal muscle development, except for a mild lack of muscle development along his T10-



Figure 8: Dr. Melchioris standing elevated on two blue bales. This allows her to remain in the correct position and alignment as she adjusts Roper’s spine. Photo credit Betsy Greene.

LS junction region, which could be due to under use and/or lack of core engagement, or a metabolic issue such as PPID. A minor injury was also observed on his back leg, which appears to be superficial. During observation at the walk, he was noted to slightly drag both hind toes. He gave the appearance of “pulling” his hind end rather than using his hindquarters to properly propel himself forward. His left hind leg swung outwards during the walk on flat ground.

Chiropractic adjustments, the meat, were performed on Roper, notably in the lumbar spine, sacral apex, thoracic vertebrae in the withers area, C1 (atlas), C2 (axis), C3-C5 (base of neck), and Temporal Mandibular Joint (TMJ). The limbs were also assessed, with adjustments made to the carpal bones, glenohumeral joint, ulna, scapula, and stifle.

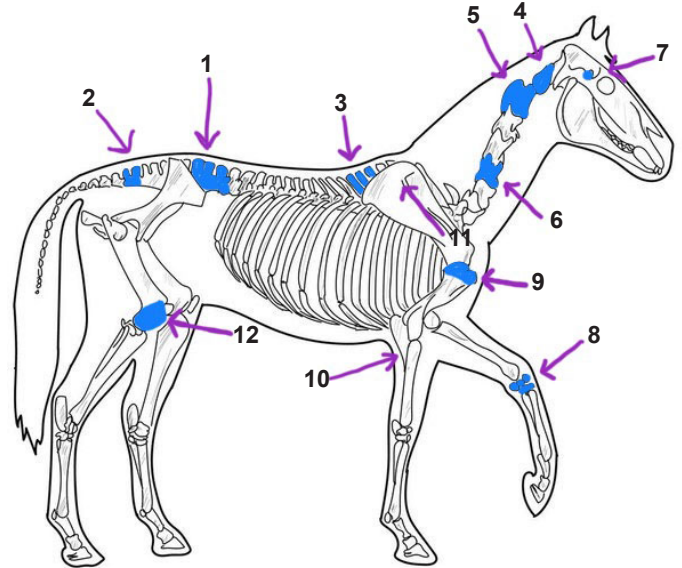


Figure 9: Areas on Roper that were adjusted. 1 - Lumbar spine, 2 - Sacral apex, 3 - Thoracic vertebrae in the withers area, 4 - C1 (atlas), 5 - C2 (axis), 6 - C3-C5 (base of neck), 7 - TMJ, 8 - carpal bones, 9 - glenohumeral joint, 10 - ulna, 11 - scapula, and 12 - stifle.

After adjustment, Roper was noted to be dragging his hind toes more than pre-adjustment. This was likely occurring from him being more relaxed, as well as temporary influences on his proprioception, which can be a common, temporary, side effect following chiropractic adjustment involving the TMJ.

A post-adjustment plan, the final slice of bread, was made for his owner to perform a few targeted exercises and stretches, including pelvic tucks and carrot stretches. Diagnostics were not recommended during this visit but they did discuss the importance of monitoring Roper for any progression in signs of discomfort or difficulty in movement. If signs worsen or new symptoms develop, a further diagnostic workup should be considered.

To support Roper's recovery and overall condition, riding him hard immediately after the chiropractic adjustments was not advised. Engaging in core exercises, such as pelvic tucks and stretches, was also recommended to improve his top line and overall condition. Making Roper work for treats by performing stretches can also help engage his muscles and improve flexibility.



Figure 10: Roper is happy and relaxed after his chiropractic adjustment. Photo credit Betsy Greene.

Mythbusters

Common misconceptions and questions with equine spinal manipulation include theories that:

Myth: If you do not hear a “popping” noise, the joint is not actually being modified or fixed. A popping noise during human chiropractic adjustments is called an audible. Audibles in the veterinary patient are often indicative of heavy handed adjustments that tend to be too aggressive. The limbs are the main area an audible can normally be heard in animals. Audibles while adjusting the pelvis and spine are uncommon.

Myth: Tools are necessary to adjust horses. While horses are large, it takes very little force to put motion into a joint. Chiropractic adjustments occur as high speed, low forces which are successful when performed at the perfect angle and perfect placement. Some chiropractors may choose to incorporate a tool, however a lack of hammers and mallets does not indicate a lack of accuracy or efficacy. A chiropractic adjustment should not hurt an animal if performed correctly. Mild muscle soreness can be expected, as the body is acclimating to an improved, but different, posture.

Myth: Horses need frequent adjustments for the rest of their life to benefit. Many animals improve within one chiropractic adjustment, however it may take 3 to 4 adjustment sessions for tangible benefits to be seen. Unless special circumstances exist animals should not be adjusted more frequently than every 3 to 4 weeks. If adjusted too frequently, animals may become overly sore, apprehensive, or over stimulated.

Myth: Chiropractors are straightening the spine and putting bones “back in place”. The goal of chiropractic is not to “straighten” the spine or put a bone in a physically different location. Motions including pulling legs or the tail in a firm manner to straighten is not appropriate. The spine has natural curves to help absorb shock and function properly. A chiropractor works with the body’s natural curves and physiology.

Chiropractic Certification, Rules and Regulations

IVCA: International Veterinary Chiropractic Association

AVCA: American Veterinary Chiropractic Association

The IVCA and AVCA are the only two recognized agencies that certify veterinarians and chiropractors. Certification shows that the person adjusting your horse has achieved the highest level of education possible in chiropractic care for animals.

Each state has different rules and statutes on who can perform spinal manipulations. In Arizona, manipulations of the body, including the spine, are considered veterinary medicine. A grey zone currently exists on the rules associated with chiropractic care of animals. The Arizona Chiropractic Board, which governs Doctors of Chiropractic (for humans), requires completion of a course specific to animal chiropractic. Best recommendations, regardless of where you reside, are to verify the credentials and certifications of any animal chiropractor to minimize risks.

If using a Doctor of Chiropractic (as opposed to a veterinarian), ensure your veterinarian endorses them. If using a veterinarian, confirm they have training in spinal manipulation.

When is chiropractic not enough?

A decision many horse owners may struggle with is deciding when to pursue chiropractic care versus a veterinary lameness evaluation on their horse. Many opt to pursue chiropractic adjustments when they detect a decline in their horse's performance, a noticeable imbalance in the way their horse walks, or a sign that their horse has pain in their back and neck. If a horse's condition is subtle or seems straight forward, spinal manipulations can greatly benefit a horse. Chiropractic care can help reduce restrictions from compensating from a lameness. If a horse has a lameness that is noticeable at the walk and trot, chiropractic is not likely to cure the issue. Head bobbing lameness, hot and swollen joints, or sudden significant performance issues are considered a medical issue, not a chiropractic one.

Should a horse's imbalances or performance worsen while receiving chiropractic treatments, veterinary diagnostics need to be pursued immediately. If a horse acts painful and reactive, multi-modal therapies are needed. Asking your veterinarian for a plan that incorporates chiropractic into your horse's performance and wellbeing is an excellent way to ensure longevity and optimal health. It is well known amongst the chiropractic community that horses who receive regular chiropractic care oftentimes require less frequent joint injections and yield long term performance benefits. It takes a team, and oftentimes a village, to keep a horse healthy and sound!

Additional Resources

American Veterinary Chiropractic Association.

<https://www.animalchiropractic.org/>

Haussler, Kevin. 1997. Application of Chiropractic Principles and Techniques to Equine Practice. AAEP Proceedings. Vol 43:pg 312.

<https://optionsforanimals.com/wp-content/uploads/2019/02/Principles-and-Techniques-to-equine-practice.pdf>

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THE UNIVERSITY OF ARIZONA

Cooperative Extension

AUTHORS

Betsy Greene, PhD

Horse Specialist - University of Arizona, Tucson, AZ

Madelyn Melchiors, DVM

Large Animal Veterinarian and Animal Chiropractor

CONTACT

Betsy Greene

betsygreene@arizona.edu

Madelyn Melchiors

MadelynDVM@Gmail.com

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